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ESSAYS ON HARAPPA  
CULTURE

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Sankarprasad Hajra



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DEDICATED

To the memory of

My grandmother

SURABALA MAJRA

22-1-21





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## II.

### INTRODUCTION

Sir John Marshall - a great name in the field of researches on Harappa Culture, and his general views about Harappa and Mohenjodaro are accepted by the Indologists of the world. Again it is a well known fact that a belief based on ill-logic can hardly be abolished in a short period of time even by rigid analyses. The Indus Valley Civilization (Harappa Culture) is depicted by the Marshallians far more mysterious than what it is. Marshall concluded that the civilization was non-Aryan in character and a contemporary of the Assyrian and Sumerian ages. Then he tried to annul the historical contradictions of his views by an interesting, imaginative description which gave birth to a new history void of a vestige of predetermined historical fact.

In fact, Marshallians tell us a pompous mythological story veiled in the curtain of mysticism in order to describe the creator and the period of the civilization by rampant scholasticism. All these titletattles are logically criticised in the essays.

To me, it seems that the civilization is basically different and comparatively recent and it may have certain possibility to be a distinct and developed phase of Vedic civilization.

\*\*\*\*\*

The last chapter of the book is the tentative decipherment of the mystic inscriptions of Harappa and Mohenjodaro. I have tried to decipher the inscriptions by attributing tentative phonetic values to the pictographs. There may be defects in some cases to do so, but I am sure that the defects will be corrected through criticism by learned readers. I think that exact phonetic values have been attributed to 𑀩, 𑀭, 𑀮, 𑀯, 𑀰, 𑀱, 𑀲, 𑀳, 𑀴, 𑀵, 𑀶, 𑀷, 𑀸, 𑀹, 𑀺, 𑀻, 𑀼, 𑀽, 𑀾, 𑀿, 𑁀, 𑁁, 𑁂, 𑁃, 𑁄, 𑁅, 𑁆, 𑁇, 𑁈, 𑁉, 𑁊, 𑁋, 𑁌, 𑁍, 𑁎, 𑁏, 𑁐, 𑁑, 𑁒, 𑁓, 𑁔, 𑁕, 𑁖, 𑁗, 𑁘, 𑁙, 𑁚, 𑁛, 𑁜, 𑁝, 𑁞, 𑁟, 𑁠, 𑁡, 𑁢, 𑁣, 𑁤, 𑁥, 𑁦, 𑁧, 𑁨, 𑁩, 𑁪, 𑁫, 𑁬, 𑁭, 𑁮, 𑁯, 𑁰, 𑁱, 𑁲, 𑁳, 𑁴, 𑁵, 𑁶, 𑁷, 𑁸, 𑁹, 𑁺, 𑁻, 𑁼, 𑁽, 𑁾, 𑁿, 𑂀, 𑂁, 𑂂, 𑂃, 𑂄, 𑂅, 𑂆, 𑂇, 𑂈, 𑂉, 𑂊, 𑂋, 𑂌, 𑂍, 𑂎, 𑂏, 𑂐, 𑂑, 𑂒, 𑂓, 𑂔, 𑂕, 𑂖, 𑂗, 𑂘, 𑂙, 𑂚, 𑂛, 𑂜, 𑂝, 𑂞, 𑂟, 𑂠, 𑂡, 𑂢, 𑂣, 𑂤, 𑂥, 𑂦, 𑂧, 𑂨, 𑂩, 𑂪, 𑂫, 𑂬, 𑂭, 𑂮, 𑂯, 𑂰, 𑂱, 𑂲, 𑂳, 𑂴, 𑂵, 𑂶, 𑂷, 𑂸, 𑂹, 𑂺, 𑂻, 𑂼, 𑂽, 𑂾, 𑂿, 𑃀, 𑃁, 𑃂, 𑃃, 𑃄, 𑃅, 𑃆, 𑃇, 𑃈, 𑃉, 𑃊, 𑃋, 𑃌, 𑃍, 𑃎, 𑃏, 𑃐, 𑃑, 𑃒, 𑃓, 𑃔, 𑃕, 𑃖, 𑃗, 𑃘, 𑃙, 𑃚, 𑃛, 𑃜, 𑃝, 𑃞, 𑃟, 𑃠, 𑃡, 𑃢, 𑃣, 𑃤, 𑃥, 𑃦, 𑃧, 𑃨, 𑃩, 𑃪, 𑃫, 𑃬, 𑃭, 𑃮, 𑃯, 𑃰, 𑃱, 𑃲, 𑃳, 𑃴, 𑃵, 𑃶, 𑃷, 𑃸, 𑃹, 𑃺, 𑃻, 𑃼, 𑃽, 𑃾, 𑃿, 𑄀, 𑄁, 𑄂, 𑄃, 𑄄, 𑄅, 𑄆, 𑄇, 𑄈, 𑄉, 𑄊, 𑄋, 𑄌, 𑄍, 𑄎, 𑄏, 𑄐, 𑄑, 𑄒, 𑄓, 𑄔, 𑄕, 𑄖, 𑄗, 𑄘, 𑄙, 𑄚, 𑄛, 𑄜, 𑄝, 𑄞, 𑄟, 𑄠, 𑄡, 𑄢, 𑄣, 𑄤, 𑄥, 𑄦, 𑄧, 𑄨, 𑄩, 𑄪, 𑄫, 𑄬, 𑄭, 𑄮, 𑄯, 𑄰, 𑄱, 𑄲, 𑄳, 𑄴, 𑄵, 𑄶, 𑄷, 𑄸, 𑄹, 𑄺, 𑄻, 𑄼, 𑄽, 𑄾, 𑄿, 𑅀, 𑅁, 𑅂, 𑅃, 𑅄, 𑅅, 𑅆, 𑅇, 𑅈, 𑅉, 𑅊, 𑅋, 𑅌, 𑅍, 𑅎, 𑅏, 𑅐, 𑅑, 𑅒, 𑅓, 𑅔, 𑅕, 𑅖, 𑅗, 𑅘, 𑅙, 𑅚, 𑅛, 𑅜, 𑅝, 𑅞, 𑅟, 𑅠, 𑅡, 𑅢, 𑅣, 𑅤, 𑅥, 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### III.

For about 45 years we are inclined to the mysticism of Marshallians, but even now we have found out nothing substantial from it. It is as mystic as it was before, an unsolvable puzzle of the age. Now, I think, it is necessary to grasp new hypotheses and to judge the validity of the hypotheses from new out looks. Marshallians think that the civilization was something highly developed emerging from out of nothing. I think that the civilization was an inevitable event, following of the necessity in the chain of historical development.

Old pedantic Marshallians from all parts of the world, I am afraid, will launch severe attack upon my hypothesis as their beloved mythological 'palace of cards' will be endangered by my arguments. But I deserve congratulations from fresh young scholars who are highly energetic to frame out new hypotheses to solve the puzzle of the age.

To decipher the seals tentatively, I was highly inspired by Mr. Indranath Bijmunder to whom I am really grateful. I wish to thank now Mr. Subhanker Bajra, Mr. Saradinshi Ghosh and Mr. Mahabrat Singh-theakur who helped me in various ways to represent the essays.



## DYING HARAPPA AND THE NEW-COMERS

(There were two cemeteries in Harappa the Cemetery R - 37 and the Cemetery H ( $H_I + H_{II}$ ). According to specialists Cemetery R-37 - the earlier cemetery was the cemetery of the Harappans, whereas Cemetery H ( $H_I + H_{II}$ ), the later cemetery was the cemetery of the New-Comers - the Vedic Aryans.

I have tried to establish that the Cemetery R-37 was not the cemetery of the Harappans. It was the cemetery of the New-comers - the Irano-Caspians i.e. the second wave of the Aryans who entered India marching through Iran. From different sources, it can be proved that these Irano-Caspians entered India ca 1000 B.C. or even later.

This conclusion has far reaching effect on the study of Harappa Culture, as the New-comers dwelt on the ruins of the Harappans at a time when the centre of Vedic culture was shifting from the Indus valley to the Gangetic plain, definitely leaving the ruins of their cities in the region.

This has forced me to infer that the Harappans were the Vedic Aryans - the first wave of the Irano-Caspians in India.

This paper is written from this standpoint).

### 1. P R O B L E M :

Before the excavations at Harappa and Mohenjodaro, it was settled by the scholars that the Aryans were the creators of Indian civilization in ancient time (6 preface V) and though there was practically no doubt that they came from somewhere outside India, yet the time of their arrival was a matter of some speculative discussions without any rigid set of reasons. After the establishment of relationship between the Rittite Kings and Aryans, it was common among the specialists to consider the arrival of the Aryans in India at least after 2000 B.C.



When the chalcolithic culture of Harappa and Mohenjodaro came to light, Marshall (6 preface V-VI; pp.102-112) and Sayce, (19, p.6) the veteran Assyriologist recognised startling similarities between this non-Aryan (also Pre-Aryan) Indian civilization and Sumerian civilization and considered this Indian civilization flourishing before 2500 B.C., with the support of the then archaeologists (5, p.218).

But actually, studying of the Indian materials in western setting started from 1933 when Childe compared the chalcolithic pottery with the pottery of West Asian sites (8, pp.15-25).

In the year 1931 Stein discovered the cemetery of Shahi Tump and observed that the graves (associated with different foreign objects not known to Harappan people) had been dug into the ruins of the Harappan period (7, pp.88-105).

In 1934 Majumdar found out the type site Jhukar where a post Harappan culture - late Jhukar culture was stratified just over the Harappan level (12, p.9) and a good number of pottery found in this level was quite alien to Harappan people. During the excavations of 1933-34 at Harappa a cemetery which is now known as Cemetery - H with complete burials and post exposure pot burials associated with a beautiful polychrome pottery different from that of Harappa culture was discovered. The cemetery as thought by the excavator was contemporary with the time of the last occupational level (not reached at Mohenjodaro) of the city (Harappa); and related with foreign conquest (22, p.235).

Thus it was being apparent that a new culture different from that of the Harappans existed in the region, after the dissipation of Harappan culture.

In 1934 Childe the well known contributor to the history of the Aryans equated the Cemetery H people with the Aryans (10, p.223). In the same paper he also pointed out the uses of (i) mace heads at Mohenjodaro and at Babylon (10, p.217), (ii) beads of frit or stone of specialised types at Mohenjodaro and in the Early



Dynastic graves of Sumer (10, pp.268-269) and (iii) the axe adze, at Mohenjodaro and at Tepe Hissar III (10, pp.268-269). One thing should be clear here that Childe would think that the Aryans entered India circa 1400 B.C. (or later, 4, p.31) and he accepted that Harappa culture ceased to exist circa 2500 B.C. (19, p.6) and as Cemetery H was thought to be related with the New-comers, so he put the hypothesis that the Cemetery H people might be the Vedic Aryans. In 1936 Childe realised the exotic character of Chanhudaro pins and wrote an illuminating commentary on the distribution of the type (14, pp.113-119).

In the same year R. Heine - Geldern studied four weapons, e.g. (i) a trunnion axe from Kurram Valley, (ii) a bronze dagger from Fort Munro, (iii) copper swords with antennae hilts from the Gangetic plain and (iv) a bronze axe-adze from Mohenjodaro. After comparisons with the similar weapons from ancient cultural zones outside India he decided that those Indian weapons indicated a date between 1200 B.C. and 1000 B.C. or even later. Heine-Geldern attributed the users of these foreign influenced articles to the Vedic Aryans and tried to indicate the arrival of the Vedic Aryans in India after 1200 B.C. (15, pp.87-113). In this year B.N. Datta pointed out the different modes of disposal of the dead prevailed among the Vedic Aryans and their similarities with the system of disposal of the dead of Cemetery H people (16, pp.223-307; 17, pp.1-68) in order to defend the hypothesis that Indus culture and Vedic Aryans belonged to the same ethnic cultural group. In 1939 Childe compared round bead seals of baked clay and a few button seals of stone from Jhukar culture with those of Tepe Hissar (19, pp.13-14) and thought that Shahi Tump burials might foreshadow the still inferential Aryan invasion in India (19, p.15).

In the year 1940 Mr. Vats in course of analysis of the paintings on the prehistoric pottery of Cemetery H excavated at



Herappa compared the paintings of post exposure pot burial pottery with rites, rituals and beliefs contained in the hymns 14, 16 and 18 of the Xth Mandala of the Rigveda, though it was 'not intended to suggest more than a comparison' on account of the characteristic system of disposal of the dead (22, pp.208-209) of the Cemetery H people. Gordons in this year studied the animal headed pins obtained from different Indian sites in western background (21, p.65).

In 1943 Mackay published the reports of the excavation 1935-36 at Chanhudaro where Jhukar Culture (Chanhudaro II) was stratified over Harappan period (Chanhudaro I; 27, p.103).

In the meantime a site of exceptional importance - Tepe Hissar was excavated in the Northern Persia.

In 1926 Childe supported the orthodox view that the eastern wing of the Indo-Iranian people descended into India not much later than the arrival of the Western wing of the Indo-Iranian into Mitanni (4, p.41).

Tepe Hissar was excavated in 1931 and Schmidt suggested the following dates for its first three periods (from below) of the site:

Hissar I - before 3000 B.C. to ca 2500 B.C.

Hissar II - ca 2500 B.C. - ca 2000 B.C.

Hissar III - ca 2000 B.C. - 1500 B.C. (9, p.341, p.366, p.390, p.452, pp.472-73).

In 1934 Kappers published his famous work "An Introduction to the Anthropology of the Near East" which placed sufficient reasons to consider the neolithic longheads of central Europe, the dolicho-cranials of Hissarlik III and Alisher IV, Damghan people (Tepe Hissar), the dolicho-cranials of Mohenjodaro and Hal, the Punjabis, the Zoroastrians, the Hittis and the Dardous, coming from the same ethnic stock which might be called by the name - the Indo-Europeans (11, p.124).

Kappers suggested the dates of Tepe Hissar as follows :-

Period I - 3500 B.C. - 3000 B.C.

Period II - 3000 B.C. - 2500 B.C.

period III - 2500 B.C. - 1500 B.C. (11, p.94).



Later on, Krogman and Schmidt modified the chronological position of the periods and suggested as follows :-

Hissar I - Before 4000 B.C. to Ca 3500 B.C.

Hissar II - Ca 3500 B.C. to 3000 B.C.

Hissar III - Ca 3000 B.C. to Ca 2000 B.C. (23, p.6).

Thus the existence of the Indo-Europeans in Tepe Hissar upto 1500 B.C. (as suggested by Schmidt) or 2000 B.C. (as modified by Krogman and Schmidt) was not going against the hypothesis that the Cemetery H people were the Vedic Aryans.

In 1935 Herzfeld writes that after the beginning of the 1st millenium B.C. a new people, the Aryans brought the change of the composition of the population of Iran (13, pp.6-7) Herzfeld also writes that three great movements of the Aryans took place from the Aryan homeland 'Eranvej' - the land of the two rivers Oxus and Ixartes, Khwarizm and Samarkand : first, the Indo Aryan migration which happened between 1500 B.C. and 1450 B.C., the second, Iranian migration which took place after the beginning of the 1st millenium B.C. and the third, the Sak migration (13, pp.7-8).

But in 1942 D.E. McCown suggested that Hissar might have ceased to be inhabited at the very beginning of the Akkadian period (24, p.52). Thus the disappearance of the Indo Europeans before 2500 B.C. from Tepe Hissar makes the appearance <sup>of</sup> them in Cemetery H after 1500 B.C. chronologically incompatible. So in 1942 Childe from Indian stand point disputed feebly on the McCown's dating of Tepe Hissar III C (25, pp.357-358). It is Stuart Piggott who through many research papers has established a close connection between Hissar III and Jhukar Culture (26, p.180) and has tried to adjust the so called gap between the disappearance of Tepe Hissar people and the appearance of the New comers in the Indus Valley.

He has suggested a late date for Tepe Hissar (- 'not earlier than Akkadian probably some centuries later', 26, pp.176-177) and has equated Hissar III with Jhukar Culture and has established the contemporaneity of Jhukar, Shahi Tump, the last phase of Mohenjodaro, Anau III and Hissar III and has regarded them sites of India. and



Baluchistan as representatives of a diffuse movement of peoples eastward in the first half of the second millennium B.C. "But whether the authors of the culture spoke Indo European dialects" according to Piggott "is another question" (28, pp.24-25).

During the excavation of 1937 at Harappa a cemetery/<sup>Cemetery</sup> R-37 was accidentally discovered. Excavation of 1946 by Wheeler proved that Stratum I of Cemetery H was much subsequent to the Cemetery R-37 and combining report and observation Wheeler showed that Stratum II of Cemetery H also was stratigraphically later than R-37 - the cemetery of Harappans (30, p.85). For the destruction of Harappan civilization Wheeler accused Indra, i.e. the Aryans on circumstantial evidence (30, p.82).

In 1946 Ross described the Ranaghundai tell in North Baluchistan, whence stratified sequences of human occupation were discovered (29, pp.284-316). In the year of 1947 Gordon classified Cemetery H pottery as Ravi I and Ravi II pottery. He placed Ravi I, Shahi Tump and Chanhudaro II (Jhukar) Culture in the chronological scale - little earlier than 1500 B.C. and Ravi II and Jhanger culture - little later than 1500 B.C. (31, p.212, p.239).

In the years 1947-48 Piggott wrote detailed notes on certain pins and a mace head from Harappa (32, pp.29-38); which were touched by Childe before many years of the publishing of this paper. In 1948 Schaeffer assigned the date of Hissar III to the period 2300-2100 B.C.

In 1949 Piggott agreed to the date scheme of Hissar III as given by Schaeffer (33, p.63) and related the New comers of Harappa culture and the people of the cairn burials of Baluchistan with Hissar people and Sialk B cemetery people respectively assigning the date of the new comers to 2000 B.C. - subsequent few centuries for the former and to 1100 B.C.-1000 B.C. for the later (33, pp.240-241).

In 1950 Gordon suggested that the people of Jhukar culture invaded the Indus valley circa 1800 B.C. (35, pp.56-57) and this people might be 'umman mandu' (known from Babylonian, Assyrian and Hittite texts) - a mixed people which included a branch of Indo-Aryan stock (35, p.57).



He also suggested that Cemetery H (more specifically Ravi II people) people was the Vedic Aryans coming much after the arrival of first Aryan speaking mixed people umman manda, (Jhukar people) in the region (35, p.58).

In the same paper Gordon pointed out that the cairn burials of Dambkoh, Jiwanri, Zangian and Moghul Ghundai are reminiscent of Necropole B at Sialk and the contents of some of the cairns of Moghul Ghundai are similar to those of the graves of the Cemetery B at Sialk (35, p.66). The people of cairn burials would use iron objects and their earlier date, according to Piggott is ca 700 B.C. in Baluchistan.

In 1950 Lal pushed the date of PG ware (generally thought to be associated with the Aryans) towards 1000 B.C. to fill up the vast interval of 1500 years between the Harappa culture <sup>of</sup> the third - second millennia B.C. and the early historic periods of circa fourth-fifth centuries B.C. (34, pp.89-93).

In 1951 Lal has pointed out that it is only mixing up of issues to consider the weapons of the Gangetic copper hoards as connected with the Aryans. He showed that these Copper hoards might have been associated with ill-fired ochre washed ware and the author of these weapons might be Proto-Australoid (37, p.39) tribes. His conclusion that the hoards need no longer be associated with the Vedic Aryans as was thought by Heine-Geldern and S.Piggott previously, has been supported by Childe, Piggott, Wheeler and Waimendorf (38, p.93). Lal is right definitely in connecting the Gangetic Copper hoard with the Proto-Australoid tribes, but the predominant western influence in the antennae swords as shown by Heine-Geldern is undeniable.

In the same year Beatrice De Cardi showed the affinities of Londo ware with the Persian Pottery of Sialk VI Cemetery B and assigned the site Londo (discovered by her) to about 1100 B.C. or later (36, pp.71-72; 45).



In 1954 Ghirshman wrote on Tepe Hissar - "If it is dated to the middle of the 2nd millenium, the cause of this destruction could be attributed to the movements of Indo-Europeans described above. If it is brought down to the last centuries of the same millenium, it may be that the cause was a new wave of Indo-Europeans, this time bringing the Iranians on the plateau" (39, p.63).

Thus, just like Herzfeld, he points out that two waves (excepting the Sakas) of the Indo-Europeans might have come in Iran in two different times.

In 1956 Heine-Geldern has successfully shown, that the Truncheon axe from the Kurram valley, a bronze dagger from Fort Munro, Copper swords with antennae hilts from the Gangetic Valley, an animal headed copper rod from the upper most level of Harappa, a pin topped by two deer heads from Mohenjodaro and the much discussed bronze - axe adze from Mohenjodaro indicate a date between 1200 B.C. <sup>-1000 B.C.</sup> So he advocates for his previously stated hypothesis that Vedic Aryans came to India between 1200 B.C. and 1000 B.C. (40, pp.136-139). In the same year Walter A. Fairservis has thought, as a whole, the date 1500 B.C. for the end of Harappa culture is too early and suggested probably more accurate date near 1200 B.C. for the disappearance of the Harappans <sup>has</sup> (41, p.155). He/also made suggestion to consider the Londo-ware people as candidate for 'a maker of the period of the Aryan civilization' (41, p.155).

In 1959 Wheeler has thought that if the Aryans concerned with the P.G. ware are dragged into the picture, then, they may represent the second phase of their invasion of India (44, p.28).

In 1962-63 Lal has published the results of C-14 dating (50, pp.203-221) worked out by different laboratories which have again pushed the final phase of Harappa towards 1300 B.C. Thus the reconstruction of the so called archaeological gap between the disappearance of Harappa culture and the arrival of the Aryan has been solely dismissed. Really, the so called C-14 datings of ancient periods of different



archaeological sites have given a shock to the systematic thoughts and works of many well known archaeologists and they seem now to reconcile their archaeological researches with this 'Scientific method' of dating. But we beg to state, that this C-14 dating of ancient Indian sites, what misfortune it may be, is solely worthless; either for the chosen defective standard or for inaccurate laboratory works or for any other unknown causes.

In 1964 D.P. Agarwala has sought to relate the Banasians with the first wave of the Aryans (54, p.200).

In the same year Ghirshman has put the hypothesis that the Iron user Sialk VI Cemetery B people was the Iranians who entered Iran in 1000 B.C. at a time when the Vedic Aryans entered India (52, pp.3-4).

In 1965 N.R. Banerjee has tried to show that the Vedic Aryans would know the uses of iron when they entered into India (57, p.144). He has also argued to condense the two distinct migration of the Caspians into one which disintegrated into two - the Indo Aryans and the Indo Iranians when they reached Iran or just before the Iranians marched into Iran shortly after 1200 B.C. (57, p.126).

In 1966 Kennedy and Malhotra pointed out striking similarity of the Navasa people with the people of Harappan Cemetery R-37 (59, p.120) and Sankalia noted the survival or a continuation both of physical types and burial practices from Harappa to Navasa stretching from about 2500 B.C. to 1000 B.C., though there was a great difference between the cultures of these two places (59 Foreword). At the 1st half of this decade Dales (51, p.36) and Reikes (53, pp.284-89; 58, pp.196-203) have raised objections against Wheeler's hypothesis of the destruction of Harappan cities by the Aryans (60, p.348, F.M.37).

In 1968, D. K. Chakrabarti has published a paper on the Aryan hypothesis in Indian Archaeology (60, pp.343-358). This paper has been much helpful to us to construct the shape of this problem.

We are now trying in the following paragraphs to solve the problem, mainly depending upon the view of Kappers :-



We have used the terms - the Caspians for the Indo Europeans and their synonyms; the Indo Caspians for the Vedic Aryans and their synonyms; the Irano-Caspians for the Iranian Aryans and their synonyms taking into account the suggestions of S.S.Sarkar (55, p.94).

2. Both the peoples of Cemetery R-37 and Cemetery H of Harappa were new comers:

Now let us try to solve the problem who the peoples of the Cemetery R-37 and Cemetery H were and whether they were the local peoples or New comers. Harappan pottery associated with the Cemetery R-37 does not necessarily mean that they were the Harappens as pottery is generally non-portable for a great migration and there is fair possibility that the New-comers might use the pottery of the local people of that region at least for some time where they migrated from a very distant land. Thus we see that it is not possible at the present state of knowledge to answer the question precisely.

But a tentative conclusion can be drawn from the analysis of Marshall on the problem.

(i) It is apparent from the work of Stein that cremation was the chief process of disposal of the dead among the people of the Indus culture (49, pp.54-57) and inhumation was the dominant method of disposal of the dead among the people of the 'Persian' culture (6, pp.89-90) and also of the Irano Caspians before their conversion to Zoroastrianism(1, p.505). And so it can be decided that the Harappens would cremate the dead bodies and this wretched process has made much disadvantage to discover their skeletal remnants. It comes then that both the Cemetery R-37 people, and the Cemetery H peoples were New-comers to Harappa (ii) The racial analyses of the peoples of Tepe Hissar, Anau, Shahi Tump, Cemetery R-37 and Cemetery H support this conclusion. The problem is connected to a large extent with the north Persian sites e.g. Hissar and Anau.

From the excavations of Tepe Hissar we know that a homogeneous population of cranial index 70-71.9 (average 70.8) for the male (and 72.8 for the female) was living in Tepe Hissar I, II and III (11, p.96);



in the period II, almost all the indices are dolichocraniais whereas in the period III, though the majority are dolichocraniais, yet a 77-79 cranial strain can be observed (11, p.124).

During the final phase of the Harappa culture peoples entered into Baluchistan; and whether they were responsible for the disappearance of the Harappens is a separate issue. Shahi Tump man as Piggsott has pointed out can be considered as one representative of the New comers (33, p.221) who on their way to reach India buried one of their warriors.

It will be seen from the analyses of the cranial indices of the skulls of Cemetery R-37 and Cemetery H - open and jar burials, that it is the skulls of Cemetery R-37 which show close resemblance with Tepe Hissar skulls, but not with the Cemetery H skulls to such a large extent (open and jar burials). Ukrainian (cranial index 75; 22, p.123, Fig.65) and Irano-Scythian (cranial index 78; 22, p.125) strains are prominent in the skulls of Cemetery H, though some of the skulls are dolichocraniais. Hence it is absurd to think that Cemetery R-37 people was other than the New-comers.

In North Kurgan (at Anau) and South Kurgan, Damghan people settled temporarily (11, p.99, p.101) and the same people inhabited at the third city of Hissarlik (11, p.162) Alishar IV, (11, p.106) Haroti Tepe B<sub>1</sub> (11, p.104) and they are closely related with the Neolithic long heads of Central Europe (11, p.98) and also to some present peoples e.g., the Balts (11, p.114) the Dardians (11, p.114) the Punjabis (11, p.95, p.115) and the Zoroastrians (11, p.114). This people was uniquely identified by Koppers as the Caspians (Indo-Europeans; 11, p.112). Thus we can conclude that the R-37 Cemetery people might be a branch of the Damghan people and the Cemetery H people might be considered as mixed Damghan people containing strains of local people on their later movements towards India.

3. Evidence that the Cemetery R-37 people was the Indo-Caspians and the Cemetery H peoples were mixed Caspians.



A lot has been said concerning the racial affinities of the peoples of different chalcolithic Indian sites by Sewell and Guha who have much used the then terms like 'Mediterranean', 'Proto Australoid' etc. which seem after Kappers to be not so useful for the racial analyses of the peoples of Harappa. Most interesting and trustworthy method of representing a people known only by their skulls is simply to represent them by their cranial indices and it is highly probable that the cranial index 70-71.9 (for the male) though not in itself sufficient for the diagnosis of a race, may have a great typognostic value to indicate a race (11, p.96) particularly for the ancient peoples of Near East. Frequency distribution curves for the comparisons of the cranial indices as has been frequently used by Kappers can not be successfully applied for the cranial indices of Harappa, Mohenjodaro, or other Indian Chalcolithic sites, as the data are scanty.

Kappers first identified a close relationship among the peoples of Nal (11, pp.117-118) Mohenjodaro (11, pp.117-118) Tepe Hissar, Alishar IV, Hissarlik III, Anau, the present Punjabis, the Dardons, the Baltis and the Zoroastrians and declared that they might have come from the same ethnic stock, the Caspians. Mr. S. S. Sarker has done his best to show that the skulls of Harappan Cemetery R-37 might have a close ethnic relationship with the Caspians. His study on Racial affinities (55, pp.72-94) of Harappan peoples is of exceptional importance and I shall advise the reader to consult it.

From the table of cranial indices of Cemetery R-37, Cemetery H<sub>I</sub> and Cemetery H<sub>II</sub>, Chanhudaro, Nal, and Shahi Tump it will be clear at once that the cranial indices of Cemetery R-37, Chanhudaro, Nal and Shahi Tump might be compared successfully with the cranial indices of the modern Punjabis, the Dardons, the Baltis, the Zoroastrians and with the cranial indices of the old peoples of Tepe Hissar (Damghan people), Anau (Kurgan people), Troy II, Alishar IV, Hanoi Tepe B<sub>I</sub> and with the neolithic long heads of Europe which are thought by Kappers as contained in the same ethnic stock, the Caspians\*.

\*"A very prominent peak (Cephalic index) at 72 is also obvious in the UP Brahmans. The Maithili Brahmanas also show a peak at 72, while the Kananjia Brahmanas of Bihar at 73" (53, p.28).



On the other hand, Cemetery H<sub>I</sub> and H<sub>II</sub> peoples and the Nevassa people have two different peaks, one at 71, and the other at 75. Hence it can be assumed that these peoples are latter branches of the Caspians (mixed) containing Ukrainian element which they might have received from local peoples of Iran. Thus Childe's hypothesis that the Cemetery H people was the Vedic Aryans and Wheeler's hypothesis that the Cemetery H was the cemetery of the Harappans do not seem to carry any momentum. It is rather more correct to say that the people of Cemetery R-37 was the Caspians (whether the Indo Caspians, or the Irano Caspians, we shall decide in the latter part of the paper) whereas Cemetery H peoples were the branches of the mixed Caspians containing a prominent Ukrainian strain.

4. The Cemetery R-37 people represents the 2nd wave of the Caspians or the Irano-Caspians; but not the first wave of the Caspians or the Indo-Caspians (Vedic Aryans).

#### (i) Time of arrival

(a) Pigott tried to uphold Wheeler's hypothesis of Aryan invasion on Harappa culture assigning Hissar IIIc to 2000 B.C. (33, p.63) and the disappearance of Harappan culture and the appearance of the Indo-Caspians in the Indus Valley to after 2000 B.C. (33, p.240). But later on, the disappearance of Harappan culture has been pushed to ca 1800 B.C. and the appearance of the Indo-Caspians has been dragged down to ca 1000 B.C. (57, p.223). But both these assignment are antagonistic as there is no such hiatus between the Harappan level and the level of the New-comers arrived at Shahi Tump, Jhukar and Chanhudaro which could make us suppose such interval from archaeological standpoint. Hence it is either the dating of the final phase of Harappa by carbon - 14 Method (50, pp.202-221) is faulty or the time of the articles associates with the final phase of Harappan culture and the first phase of the New-comers as dated convincingly by Prof. R. Heine Geldern (40, pp.126-130) is of no value. But ~~we~~ <sup>they</sup> are more intentional to depend upon the archaeological system of dating as has been done by Mr. Heine Geldern and hence wish to dismiss the radio carbon dating as worthless for dating chalcolithic Indian sites.



(b) H. D. Sankalia has brought to our notice strong Sialk necropolis B and Tape Nissar strains in the pottery of NVT III (Navadatoli), Nagada, Bahala and Prakash (43 Preface xii-xiii). Really a considerable no of pottery published by him makes us suggest that a people who came into close contact with Iranian civilization were inhabiting in Malwa. The date of top layers of chalcolithic habitation of NVT III has been assigned to 1000 B.C. by Miss. E. K. Ralph with C-14 method and this date is hardly to be substantiated.

NVT III stratigraphically underlies the debris of the early historic period (IV) characterised by NBP ware. From Nevasa N.B.P. ware is dated to 2nd - 1st century B.C. (46, p. 69); and there is no gap\* identified between these two periods. Hence the date of the top layers of NVT III will be assigned to the end of the first half of the first millennium B.C. (or even much later). So from the archaeological excavation at NVT and Nevasa (not paying any heed to C-14 method of dating which has assigned the topmost layer of chalcolithic culture at Nevasa to 984 B.C.-1228 B.C.; 46, p. 68), we can conclude that the chalcolithic cultures of Malwa with prominent Iranian elements existed most probably, at least upto 500 B.C. (or even later). Thus we see that the time of arrival of these branches of the Caspians and the mixed Caspians is circa 1000 B.C. or later but never ca 1500 B.C. which is the supposititious time of arrival of the Indo-Caspians (Vedic Aryans).

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\*As yet the full reports of all the excavations have not been published. But one thing is certain, viz., the relative stratigraphical position of the Chalcolithic culture. It generally lies over the black or dark brown soil and underlies the debris of the earliest historical cultures characterised by the use of iron, coins and black and red pottery associated with the N.B.P. and very often buildings of large-sized bricks'. The excavations at Maheswar and Navdatoli Sankali subbaras, Deo. p. 244.



(ii) Disposal of the dead

The dominant method of disposal of the dead of the Indo-Caspians (Vedic Aryans) was definitely cremation (though other forms were known and might be practised; ritual books have no rules regarding it, except in so far as the bones of the cremated might be interred). This is elaborately stated in different ritual books of the Hindoos. (1, pp.475-479; 3, pp.617-618, 2, p.126).

Some of the orientalist with a view to supporting the connection of the Cemetery H people with the Indo-Caspians (Vedic Aryans) have deliberately translated slokas from the religious books of the Hindoos to prove that they would practice burials (16, pp.223-307; 17, pp.1-68).

It is absurd to connect the complete burials and post exposure pot burials of Cemetery H<sub>I</sub> and H<sub>II</sub> with the Indo-Caspians. Rather the complete burials of Cemetery R-37 might invoke the burial custom of the Irano-Caspians as known from their later records and from the tombs of Achaemenians (1, p.505). Again the burial customs of Cemetery H<sub>I</sub> might invoke Median influence which might be explained by assuming that the mixed Indo-Caspians assimilating the local people of Iran might bring this custom first to India.

Thus it is better to assume that this branch of the Caspians were the Irano-Caspians than to think them as the Indo-Caspians who would dominantly practise cremation.

(iii) Contemporaneity of the P.G.Ware people in the Gangetic plain and the New-comers.

During the arrival of the New-comers (1000 B.C.), we find the Indo-Caspians - the P.G.Ware people (1000 B.C.) in the Gangetic plain mainly. If we consider the New-comers as the Indo-Caspians, how we shall reconcile the literal fact that the Punjab (not the Gangetic plain) was the region where the Vedic Aryans first inhabited.

It can be reconciled by thinking that the New-comers were the Irano-Caspians who entered India at a time (ca 1000 B.C.) when the Indo-Caspians (Vedic Aryans) had just mainly migrated from the Indus Valley region to the Gangetic plain.



## (iv) The route of expansion inside India

We see a strong ethnical and cultural similarity of final phases of chalcolithic cultures of Malawa with Hissar and Sialk VI Cemetery B. But no such similarity could be traced in the Gangetic plain. Again it is probable that some branches of the New-comers reached Bihar and Bengal via Madhya Pradesh. This might indicate a strong pressure from the Gangetic plain which made the New-comers to go mainly to the South. Thus the route of expansion of the New-comers inside India mainly towards the South, does not provide us with the suggestion of connecting them with the Indo-Caspians. Rather, the route of expansion of these Caspians towards South may suggest that they were the second wave of the stock.

## (v) Route outside India

Again if we trace the route outside India traversed by these New-comers we shall find that the New-comers of Cemetery R-37 of Harappa came down from N.E.Iran to S.E.Iran; entered Baluchistan and touching Shahi Thump Jhukar and Chan-hudaro, they reached Harappa at a time when most of the Harappans changed their place of civilization from the Indus plain to any other unknown places.

The route through which the New-comers came, does not correspond with the route of the Indo-Caspians who possibly did not cross Iran but simply touched it to the North. So it is more probable that this branch of the Caspians was a group of the Irano-Caspians. Some archaeologists are eager now to fix the time of the arrival of the Indo-Caspians circa 1000 B.C. But it is highly improbable to fix the date much after 1500 B.C. from the evidence of literary records and causes detailed in those previous paragraphs.

Hence considering time and other causes aforesaid, the hypothesis of the migration of the Caspians in one wave in India becomes untenable; it is highly probable that the Caspian migrations took place in two distinct waves (excepting the later migration) in Iran and in India and these New-comers of Harappa were related with the second wave of the Caspian migration i.e. the migration of the Irano-Caspians.



Ghirshman has tried to establish that Sialk VI Cemetery B people were the Irano-Caspians and M.R.Banerjee has extended this hypothesis in the case of Indian Protohistory which states that the Aryans would know the uses of iron when they entered India. For this reason only he is willing to relate the Caspians not to Hissar but to Sialk VI Cemetery B people (57, p.127). But this hypothesis of Ghirshman can never be supported from Indian background. Culturally Sialk VI Cemetery B is related to the cairn burials of Baluchistan of comparatively recent times and ethnically the people of Sialk VI Cemetery B (brachycranials with mesocranial strain) was related with the people of the megalithic burials of Brahmagiri (47, p.23) and Jelleswaram (48, p.26, p.28).

At the present state of our knowledge, to consider these cairn burials of ca 1000 B.C. connected with the Caspians is a blunder and to hope for days when some rigid evidence will come in support of Ghirshman's hypothesis from India is simply nothing but to dream of a day-dream. As the evidence comes from Hissar, Shahi Tump, Jhukar, or Chanhudaro it is by no means logical to consider that this branch of the Caspians would use iron when they inhabited at Hissar or when they came to India.

A 77-79 cranial index people whom Keppers has identified as iron - users (11, p.154) was present, at Tepe Hissar, (Table I) Harappa (Table I) and also in the megalithic burials of Brahmagiri and Jelleswaram\* (Table II). Again we see that influx of this people (cranial index 77-79) took place more deliberately at Tepe Hissar than at Sialk. Hence to identify this 77-79 cranial index people as Iron-users is hardly to be substantiated in Iran. Rather Sialk VI Cemetery B. people, the brachycranials might be considered at least one of the iron introducers both in Iran as evidenced from Sialk VI Cemetery B and also in India as evidenced from Brahmagiri (47, p.15, p.23) and Jelleswaram (52, p.26, p.31).

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\*Unfortunately, no human skulls are obtained from the cairn burials of Baluchistan so that any comparison can be done.



Thus we see that all the prehistoric chalcolithic migrations through Baluchistan to India can primarily be attributed directly or indirectly to two broad categories. The first one - the migrations connected with Hissar; Cemetery R-37, Jhukar, Ghanhuharo II, Shahi Tump and Cemetery H might be included in this category.

These migrations were the migrations of mainly 71 cranial index people mixed with different amount of Ukrainian strain (75 cranial index) and Irano-Scythian strain (77-79 cranial index) at different sites.

And the second one - the migrations connected with Sialk VI Cemetery B; the cairn burials of Baluchistan and the megalithic burials of South India might be included in this category. These migrations were the migrations of the <sup>brachy</sup>brachycranial people mixed with some mesocranial strain, who might have entered India with the knowledge of iron. This people was definitely other than our Caspians.

At Lothal it seems that both Tepe Hissar people (cranial index 71) and Sialk VI Cemetery B people (brachycranials) lived together (56,p.204) and made a composite culture.

### 5. CONCLUSIONS

We can now trace two ethnic migrations of circa 1000 B.C. via Baluchistan; one - the migrations of 71 cranial index people (with a little 75 and 77-79 cranial strains) and the other; the migrations of the brachycranials (mixed with mesocranial strains). First one in the previous paragraphs has been attributed to the Irano-Caspians and the second one might be attributed to the Sialk VI Cemetery B people, the Armenoids. Groups of mixed peoples of the Irano-Caspians later on, assimilating the local peoples of Iran and Baluchistan might have also constituted the later portion of the train of the migrations of the Irano-Caspians as evidenced from Cemetery R<sub>III</sub>, Cemetery H<sub>I</sub> and Navase. Again, from Lothal it seems that the Irano-Caspians and the Armenoids made a composite culture.



Now the question arises, who then the Indo-Caspians (Vedic Aryans) were in the Indus Valley, who came at least before 500 years of the arrival of the Irano-Caspians in the region.

To solve this problem we are to judge the different aspects of Harappa culture, its disappearance from the Indus Valley ca 1000 B.C. and its different articles with strong Hindu resemblances, precisely and deeply.

Taking into account the mature civilization as evidenced from Harappa, we can conclude that the centre of civilization of the Harappans was the Punjab and from this place they moved eastwards towards the Gangetic plain and southwards towards the Deccan; whereas, the New-comers mainly went southwards\* most probably on account of the strong pressure from the Gangetic plain. Is not the expansion of Harappan culture from the Punjab towards east and south at a time (ca 1000 B.C.) when the Indo-Caspians (Vedic Aryans) are going from the Indus Valley to the Gangetic plain at all indicative? Are the disappearance of the Harappans from the Indus plain (ca 1000 B.C.) and the appearance of the P.G. Ware people ca 1000<sup>B.C.</sup> (or little later) in the Gangetic plain really unconnected? Should the similarities of the Harappan objects with <sup>many</sup> Hindu objects of later times be simply dismissed by the hypothesis of borrowing?

There is some vague similarities between different chalcolithic West Asian cultures and the culture of the Harappans but these are nothing but the general similarities of chalcolithic cultures of Asia as a whole; there are also some vague similarities among the culture of Harappa and the first phase and also the later phases of the civilization of the Indo-Caspians in the Gangetic Valley, which might be no more than a continuation of cultural heritage through ages. But there is at least some possibility to connect the

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\*Some branches of them reached Bihar and Bengal not through U.P. but most probably through M.P.



Harappans with the Indo-Caspians and their dissimilarity might also be reconciled by assuming the culture of the later in the Gangetic plain as the same culture being transformed from the chalcolithic age to the iron age.

At least let us speak that it will not be at least irresponsibility to search facts to defend the hypothesis that the Harappans were the Indo-Caspians (Vedic Aryans); but veteran Indologists generally dismiss such hypothesis when some Hindoo orthodoxes hit the problem by their own ways.

It should be remembered that learned Indologists have done practically nothing to unveil the mystery of Harappa (except the collecting of facts). Their age old hypothesis that the Harappans were Non-Aryans and Pre-Aryans has not solved any problem but created many. We are not intended here to support the blind orthodoxy of those irresponsible orthodox theorists but only intended to judge their hypothesis properly from archaeological stand point but not from similar irresponsible dogmatic attitude.

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T A B L E - I

A tentative Racial analysis of the Populations of the Sites, ethnically related with Tepe Hissar People

Site	Sex	Cranial	Indices	R e m a r k s
PERIOD I	M	66.2		The mode of the Cranial indices of Tepe Hissar people is at 71. These dolichocranials are identified by Kappers as the Caspians. A negligible No. of 75 Cranial index people (Ukraniens) and 77-79 Cranial index people (Ireno-Scythians) were also present. So we can conclude that the over-whelming majority of the Caspians and a negligible small No. of the Ukraniens and the Ireno-Scythians constituted the total population of Tepe Hissar.
	F			
	I	74.85		
	M	60.04; 68.04; 68.48; 69.27; 71.13; 71.20; 73.51; 73.85;	75.14	
PERIOD II	F	70.79; 72.25; 72.32; 74.03; 74.86; 75.28; 75.54; 75.98		
	I			
	M	68.29; 64.92; 65.08; 66.32; 66.34; 66.49; 66.67; 67.01; 67.03; 67.72		
	F	67.84; 68.06; 68.11; 68.50; 68.53; 68.53; 68.72; 68.75; 68.78; 68.95		
PERIOD III	M	69.11; 69.15; 69.23; 69.23; 69.40; 69.47; 69.52; 69.59; 69.68		
		69.73; 69.85; 69.90; 69.95; 69.95; 70.05; 70.16; 70.21; 70.31; 70.47		
		70.49; 70.53; 70.62; 60.65; 70.68; 70.79; 70.81; 70.92; 70.92		
		70.92; 70.97; 71.13; 71.27; 71.50; 71.58; 70.67; 71.66; 71.67; 71.74		
		71.81; 71.81; 71.88; 71.88; 71.96; 71.96; 72.13; 72.16; 72.19; 72.25		
		72.34; 72.43; 72.43; 72.73; 72.73; 72.97; 73.16; 73.26; 73.26		
		73.30; 73.48; 73.51; 74.51; 73.60; 73.63; 73.68; 73.89; 73.89		
		74.21; 74.30; 74.35; 74.59; 74.71; 74.74; 75.15; 75.15; 75.13; 75.68		
		75.72; 76.22; 76.24; 76.84; 77.05; 77.78; 78.33; 80.90		

contd ....



TABLE -I (Contd.)

Site	Sex	Cranial	Indices	R e m a r k s
TEPEHISSAR	F	68.82; 69.35; 70.06; 70.53; 70.72; 71.12; 71.43; 71.58; 71.66; 71.82 72.07; 72.07; 72.32; 72.32; 72.41; 72.47; 72.53; 72.67; 72.73; 73.03 73.08; 73.26; 73.51; 73.74; 74.03; 74.48; 74.57; 75.28; 75.31; 75.82 76.35; 76.82; 77.90; 77.91; 78.57; 79.43; 81; 85.62		
	I	69.43; 69.78; 70 ; 71.59; 72.41; 73.26; 73.41; 73.71; 73.84; 74.32 74.86; 75.42; 75.74; 75.88; 76.02; 76.05; 77.08		
Na1	M	70.02		The Caspian
Shah1 Dump	M	Dolichocephal		The Caspian
Chanhudaro	F	71.07		The Caspian
Mohenjodaro	M	63.32; 68.37; 68.72 ?; 71.16; 71.71; 72.73; 73.43; 76.73 ?		
	F	57.45 ? ; 69.45 ?; 70.08		The Caspian
	I	85.37		
Harappa Cemetery R-37	M	68.06; 68.91; 69.15; 69.31; 69.63 ?; 70.43; 71.44 ?; 71.81; 72.19 72.83; 74.47; 75.90; 79.79		The case is here to a greater extent similar to Tepe Hissar. A majority of the Caspians with relatively small number of the Ukrainian and the Iremo-Soychinas constituted the population of the graves.
	F	66.30; 68.68 ?; 70.78; 71.27; 71.28; 71.27; 72.13; 72.47; 75.58 77.84; 80.70		
	I	77.11		



TABLE I (Contd.)

Site	Sex	Cranial	Indices	Remarks
Harappa Cemetery H (Open burial)	M	75.13; 75.75; 79.27 ?		The case is here different from that of Tepe Hissar. The majority of the population might be assumed as the Ukrainians with relatively small number of the Irano-Scythians and the Caspians
	F	71.93 ?; 80.24		
Harappa Cemetery H (Jar burial)	M	68.18; 73.39 ?; 76.63 ?		An intimate mixture of the Caspians, the Ukrainians and the Irano-Scythians.
	F	72.47 ? 72.73; 74.18; 74.72; 75.72; 75.73; 76.88; 84.00		
	I	70.66		
Harappa Mound AB	M	73.08		The Caspian.
	F	69.83; 69.95 ?		
Harappa Area G	I	76.51		The Caspians and the Irano-Scythians
	M	71.62; 72.47; 72.77; 78.01; 79.12; 79.33; 81.29		
	F	71.84; 77.11		
	I	66.87; 75.90; 80.63		
Nevassa	M	67.2		The Caspians and the Ukrainians
	F	72.4; 75.8		



TABLE - II

A Tentative Racial Analysis of the populations of the sites ethnically related  
with Stalk VI Cemetery B People

Site	Period	Sex	Cranial	Indices	Remarks
S I A L K	Stalk I	M	69.3 ?; 69.3 ?; 74.79		The Armenoids are highly prominent in the Stalk VI Cemetery B
		F	68.4 ?; 70.3 ?; 79 ?		
	Stalk II	M	65 ?; 65.3 ?		
		F	74.1 ?; 74.2 ?; 82 ?		
	Stalk III	M	69.1		
		F	68.2		
	Stalk IV	I	73.7; 76; 83.3		
		F	82.1		
	Stalk V	I	84.4 ?		
		M	79.2 ?		
Jalles Waram	Stalk VI	F	73.1		The Armenoids are also traceable in the site
		M	73.9; 75.7; 80; 81.2; 81.8; 83.3; 84.2; 87.4; 86.1; 92.8 ?		
	Megalth	F	73.3; 74.4; 83.2; 86.9; 88.8; 89.6 ? 92.9		
		M	78.21; 79.13; 80.75 ?; 83.52		
	Megalth	F	64.22 ?		
		M	68.87; 69.27 * (Not from megalithic burial)		
	Megalth	I	68.87; 69.27 * (Not from megalithic burial)		
		M	80.57; 81.73 ?; 89.09 ?		
	Megalth	F	74; 76.92		
		M	80.57; 81.73 ?; 89.09 ?		



A Tentative Chronological Scheme

Ca 1500 B.C. or a little  
earlier, probably  
Ca 1800 B.C.

- (i) Arrival of the Indo-Caspians in India; (ii) Beginning of Harappan Culture

Ca 1000 B.C.

- (i) Disappearance of the Harappans from the Indus Valley; (ii) appearance of the Indo-Caspians mainly in the Gangetic plain; (iii) arrival of the Irano-Caspians (New-comers) in the Indus Valley.

Ca 800 B.C.

- (i) Arrival of different branches of the mixed Irano-Caspians in India; (ii) arrival of the Armenoids (the brachycranials) in India.

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WEIGHTS AND MEASUREMENTS OF HARAPPA  
CULTURE IN TERMS OF RAKTIKĀ AND ANGULA

In the following paragraphs and tables I am intending to relate Harappan weights with the ancient Indian weights of Gold, Silver and Copper. According to Mr. A. S. Hammy there were two systems of weights<sup>1</sup> used by the people of Harappa culture.

First one (in gms.) :- .856; 1.71; 2.28; 3.42; 6.85; 13.12; 27.39; 54.78; 136.96; 171.2; 273.92; 1370.

and the second one<sup>2</sup> described by Mr. Hammy as exceptional weights at Mohenjodaro (in gms.) :- .98; 2.07; 3.03; 3.92; 24.5; 47.30.

From vivid observations (without making  $\frac{1}{2}$  test) of the tables of weights found from Harappa and Mohenjodaro, it will be at one obvious that the second system or the exceptional system is not exceptional at all; this system is originated, rather created with a view to showing an approximate similarity of some of the weights of Harappa Culture with Babylonian system by an "As you like" type explanation. The exceptional system can easily be reasonated with the first system i.e. the exceptional weight .98 gm. may be taken as one defective specimen of the normal system of the weight-standard of .850 gm.

Similarly,

2.07 gms.	may be taken for one defective specimen of 2.15 gms.
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3.03 gms. and 3.92 gms.	may be taken for two defective specimens of 3.44 gms.
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24.50 gms.	may be taken for one defective specimen :" of 27.53 gms.
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47.30 gms.	And may be taken for one defective specimen of 55.07 gms.
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It is more logical to assume that the last two weights i.e. 24.56 gms. and 47.30 gms. are the defective specimens of the normal weights 27.36 gms. and 52.8 gms. respectively than to think that those above mentioned weights are different system of weights used in HM\* and they possess approximate resemblance with light Babylonian System. The exceptional system of Mr. Hemmy is a wishful selection of few defective weights among large number of Harappan weights placing one eye to the table of light Babylonian system. Still in the table "Approximation of the Indus valley weights to Babylonian system"<sup>3</sup> Mr. A. S. Hemmy will certainly deliver you some fun to find out the approximate similarity and make you think what Marshallians did to point out the imaginary resemblance of Harappa Culture with the civilization of Sumer and Assyria. This type of dogmatic attitude of explaining Harappa materials either to be Assyrian or to be sumerian by hook or by crook is a well known tradition of the Marshallians.

To prepare the tables "Excavations at Harappa" by M. S. Vats (Vol.II, pp.365 - 365) and "Mohenjodaro and the Indus civilization" by Marshall (Vol.II Marshall pp.589 - 598. Appendix II - List of Weights from Harappa) are consulted. When the same specimen of weights are tabulated in the reports with different weights, I have taken the results of the former. For the weights of Mohenjodaro, the same process described above is adopted. The description of weights are taken from "Mohenjodaro and the Indus civilization". Only perfect and slightly chipped weights of both the sites are taken into considerations. The weights which lack the descriptions of their condition are treated as perfect.

\*HM :- HM means Harappa and Mohenjodaro together.



According to Manu Indian system of weighing silver, gold and copper are given below<sup>4</sup>.

### S i l v e r

2 Raktikās	= 1 Māsha	.21510 gms.*
16 Māshas	= 1 Purāṇa	3.4417 gms.
10 Purāṇas	= 1 Śatanāṇa	34.417 gms.

### Gold and Copper

5 Raktikās	= 1 Māsha	.53775 gms.
16 Māshas	= 1 Suvarṇa; Ārshāpāṇa (only for Copper)	8.604 gms.
4 Suvarṇas	= 1 Pala	34.417 gms.
10 Palas	= 1 Dharṇa	344.17 gms.

We see here that the Śatanāṇa (320 raktikās) in the Silver system has the same weight as the Pala (320 raktikās) in the Gold system. In the Gold and Copper systems, there is a higher unit, gold Dharṇa which is 10 times of a Pala and this unit is absent in the Silver system. From the tables I and II we may consider that for weightment of common articles, Harappan people would use Silver system. The general system of weightment of common articles of Harappan people, may be thought to have been based on the following system.

2 Raktikās	= 1 Raupya Māshaka	.21510 gms.
16 Raupya Māshakas	= Purāṇa (Silver)	3.4417 gms.
10 Purāṇas (Silver)	= 1 Śatanāṇa (Silver)	34.417 gms.
10 Śatanāṇas (Silver) <sup>5</sup>	= 1 Suvarṇa Dharṇa	344.17 gms.

Harappan weights can easily be explained in terms of above unit weights of ancient India and the explanation is so clear that one is forced to infer that the weighing units of Harappa Culture were exactly the same as the prescribed weighing units of Manu (See Table I and II)

\*For various reasons I have taken 1 raktikā = .10755 gms.



Mr. H. D. Sankalia<sup>6</sup> thinks that the weight system of Navasa, especially with regard to the ratios possessed closer resemblance with light Babylonian system than with the Harappan system.

But I think that the people of Navasa used the same system of weightment (See Table III) as the people of Harappa, Mohenjodaro and Chanhudaro did.

From the following table, it will be apparent that Navasa - people used cruder weights and so we may infer that Navasa people were lesser advanced than the Harappan people in connection with the uses of weights.

The weights obtained from Chanhudaro<sup>7</sup> (See Table II) and the Beahm site Taxila<sup>8</sup> (See table IV) also show unmistakable resemblance with the weights of Harappa and Mohenjodaro.

### M E A S U R E M E N T

Relation between the Harappan scale and the system of measurement of ancient India may be traced, by observation and comparison. But this method of observation and comparison of the Indus scales with ancient Indian scales will give us no conclusive result. The weight system of ancient Hindoo India was unique, and as far as we know no peoples other than the Harappans used such system of weightment; and so definite conclusion can be drawn from the analysis.

But for measurement, the cubit system, was customary in many parts of ancient world e.g., Egypt, Asia Minor, Greece, Lachish, Syria etc.<sup>9</sup> It can be shown that like the people of ancient Hindoo India (also like other ancient peoples) the Harappan people used cubit system of measurement.

Indian systems of measurement are given

below as known from ancient literatures<sup>10</sup>. (Vridhha Manu).

8 Yavas	= 1 Angula
12 Angulas	= 1 Vitasti
2 Vitasti	= 1 Hesta or cubit



and

$$* 6 \text{ Yavas}^{11} = 1 \text{ Āṅgula}$$

$$24 \text{ Āṅgulas} = 1 \text{ Hasta.}$$

Whatever be the measure of 1 Yava, it is obvious that the length of 1 Āṅgula was fixed. 1 Hasta of Indian scale varies from 18" - 19". So the length of 1 Āṅgula will vary from .75" to .79125". One Yava, then, (if 6 Yavas = 1 Āṅgula be customary one) will vary from .125" to .1318" and 2 Yavas will vary from .250" to .26275".

One <sup>12</sup> of the two scales of Harappan culture (found at Mohenjodaro) could easily be explained in the light of ancient Hindoo - scale. (See Table V).

Again the second scale <sup>13</sup> found at Harappa tallies well with the Indian system -: (See Table VI).

$$8 \text{ Yavas} = 1 \text{ Āṅgula}$$

$$24 \text{ Āṅgulas} = 1 \text{ Hasta (18")}$$

$$\text{Hence } 1 \text{ Yava} = .09375 \text{ inch.}$$

$$\frac{1}{2} \text{ Āṅgula} = 4 \text{ Yavas} = .37500 \text{ inch.}$$

From the nature of the weights and measurement of Harappa culture and ancient Indian coins and scales, i.e. their basic unit the system of change of basic unit to higher units, I can not but think that the system of weights and measurement of HM and ancient Hindoo India was the one and the same (especially with regard to weights) and the conclusion which comes from the picture is rather shocking and I am afraid of stating that such strong similarity can hardly be explained by the borrowing theory. One reasonable explanation which can never be excluded is that, both the peoples are the one and the same and hence, the weights of Harappa Culture were not so old as the Marshallians think.



In all the tables F means Harappa; M Mohenjodaro; HM Harappa and Mohenjodaro together; C Chanhudaro and T Taxila; d means at least some of the specimens of the Group are defective.

# TABLE I

A survey of the weights from Harappa and Mohenjodaro

Group	Site	No. of specimens	Range (in grams)	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
HAR 1	M	1		.550	1 māsha (Gold)	1 māsha (Gold) = 5 rakṣakās = .10755 gm x 5 = .53775 gm	C - .58
HAR 4	H	1		.950	4 māshas (Silver)	1 māsha (Silver) = 2 rakṣakās = .10755 x 2 gm = .21510 gm 4 māshas (Silver) = .21510 x 4 gm = .8604 gm	C - .8861
HAR 8	M	13	1.150-1.920	1.620	8 māshas (Silver)	8 māshas = .21510 gm x 8 = 1.7208 gm	C - 1.53
HAR 4	H	4	2.6 - 2.9	2.8	4 māshas (Gold)	4 māshas (Gold) = .53775 gm x 4 = 2.151 gm	C - 2.46



TABLE - 1 (contd.)

A survey of the weights from Harappa and Mohenjodaro

Group	Site	No of specimens	Range (in grams)	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
PAG 1	HM	52	3,030-3,950	3,450	16 Mashas (Silver) = 1 Purāṇas (Silver)	1 Purāṇas (Silver) = 3,447 gms.	C - 3.82
PAG 2	HM	68	6,310-7,310	6,805	2 Purāṇas (Silver)	2 Purāṇas (Silver) = 3,447 gms. x 2 = 6,884 gms.	C - 6.78 N - 6.78 T - 7.06
PAG 4	HM	68	13,030-15,000	13,760	4 Purāṇas (Silver)	4 Purāṇas (Silver) = 3,447 gms. x 4 = 13,768 gms.	C - 13.88 N - 15.4 T - 13.25
PAG 8	N	54	25,354-29,225	27,385	8 Purāṇas (Silver)	8 Purāṇas = 3,447 gms. x 8 = 27,536 gms.	C = 27.92
	H	60	25,050-29,500	27,057			T = 27.10
SAG 1	H	4	36.79 - 39.40	37.21	10 Purāṇas (Silver) 1 Satamaṇas (Silver)	= 1 Satamaṇas = 34,417 gms.	C - 32.74 N - 34.89 T - 35.96



TABLE - I (Contd.)

A survey of the weights from Harappa and Mohenjodaro

Group	Site	No of specimens	Range (in grams)	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
PAE 16	H	16	49.750-56.000	53.521	16 Purāṇas	16 Purāṇas (Silver) = 3.4417 grms x 16 = 55.0672 grms	C - 53.33 H - 54.82 T - 53.45
	M	10	53.810-54.406	54.241	(Silver)		
SAC 2	H	2	61.300-67.500	64.4	2 Śatamāṇas (Silver)	2 Śatamāṇas (Silver) = 34.417 grms x 2 = 68.834 grms.	C - 65.27 H - 66.1 T - 60.67
SU ANLO	H	3	80.7 - 89.7	85.53	10 Suvarṇas (Gold)	10 Suvarṇas (Gold) = 8.604 grms x 10 = 86.04 grms	
SAC 3	M	1		96.476	3 Śatamāṇas (Silver)	3 Śatamāṇas (Silver) = 34.417 grms x 3 = 103.251 grms	N - 105.32
SAC 4	H	19	131.4-135.9	130.63	4 Śatamāṇas (Silver)	4 Śatamāṇas (Silver) = 34.417 grms x 4 = 137.668 grms	C - 131.45 H - 135.3
	M	6	136.6-137.81	135.67			



TABLE - I (contd.)

A survey of the weights of Harappa and Mohenjodaro

Group	Site	No of specimens	Range (in grams)	Average weight (in grams)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in grams)	Relevant average weight from other Indian sites (in grams)
Śāg 5	H	3	151.424-185.500	170.308	5 Śatamāṇas (Silver)	5 Śatamāṇas = 34.417 gms x 5 = 172.085 gms	
Śāg 8	H	1		263.5	8 Śatamāṇas (Silver)	8 Śatamāṇas = 34.417 gms x 8 = 275.336 gms	C - 267.06 N - 284.3
	M	3	270.70-275.20	273.61			
Śāg 16	H	1		546.7	16 Śatamāṇas (Silver)	16 Śatamāṇas (Silver) = 34.417 gms x 16 = 550.672 gms	C - 544.77
Śāg 40 or Dhau 4	H	1		1375	40 Śatamāṇas (Silver)	40 Śatamāṇas (Silver) = 34.417 gms x 40 = 1376.68 gms	
	M	3	1375-1445.85	1414.18	4 Dharaṇas (Gold)	4 Dharaṇas (Gold) = 344.17 gms x 4 = 1376.68 gms	
Śāg 80 or Dhau 8	H	24	2652.8-2703.9	2678.37	80 Śatamāṇas (Silver)	80 Śatamāṇas (Silver) = 34.417 gms x 80 = 2753.36 gms	
	M	24	2735.78-2576.30	2656.05	8 Dharaṇas (Gold)	8 Dharaṇas (Gold) = 344.17 gms x 8 = 2753.36 gms	
Śāg 320 or Dhau 32	M	14		11467.58	320 Śatamāṇas (Silver) or 32 Dharaṇas (Gold)	320 Śatamāṇas (Silver) = 34.417 gms x 320 = 11013.44 gms	



TABLE - II

A survey of the weights from Chandudaro

Group	No. of specimens	Range (in gram)	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
MAU 1	2	.5695-.5935	.58	1 Māsha (Gold)	1 Māsha (Gold) = 5 rakṭikas = .10755 gm x 5 = .53775 gm.	M - .65
MAE 4	1 <sup>d</sup>		.8861	4 Māshas (Silver)	1 Māsha (Silver) = 2 rakṭikas = .10755 gm x 2 = .21510 gm. 4 Māshas (Silver) = .21510 gm x 4 = .8604 gm	H - .960 M - .887
MAE 8	3 <sup>d</sup>	1.630-1.9395	1.820	8 Māshas (Silver)	8 Māshas (Silver) = .21510 gm x 4 = 1.7208 gm	H - 1.62 M - 1.76
MAU 4	3 <sup>d</sup>	2.063-2.961	2.46	4 Māshas (Gold)	4 Māsha (Gold) = .53775 gm x 4 = 2.1510 gm	H - 2.66
PAE 1	13 <sup>d</sup>	3.3285-4.944	3.82	1 Purāṇa (Silver)	1 Purāṇa (Silver) = 3.4417 gms	HM - 3.46 T - 3.37
PAE 3	17 <sup>d</sup>	5.471-7.457	6.78	2 Purāṇas (Silver)	2 Purāṇas (Silver) = 3.4417 gms x 2 = 6.8834 gms	HM - 6.806 T - 6.78 I - 7.06



TABLE - II

(contd.)

A survey of the weights from Chanuḍaro

Group	No of specimens	Range (in grms)	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
PAG 3	4d	8.620-10.65	9.30	3 Purāṇas (Silver)	3 Purāṇas (Silver) = 3.4417 gms x 3 = 10.3251 gms	N - 9.24
PAG 4	16	13.40-14.90	13.82	4 Purāṇas (Silver)	4 Purāṇas (Silver) = 3.4417 gms x 4 = 13.7668	M 13.76 N - 15.4 T - 13.25
PAG 6	7d	18.10-23.70	20.97	6 Purāṇas (Silver)	6 Purāṇas (Silver) = 3.4417 gms x 6 = 20.6502 gms	
PAG 8	21d	26.68-30.39	27.92	8 Purāṇas (Silver)	8 Purāṇas (Silver) = 3.4417 gms x 8 = 27.5336 gms	M - 27.365 H - 27.057 T - 27.10
PAG 1	2d	32.38-33.10	32.74	1 Śatamāna (Silver)	1 Śatamāna (Silver) = 10 Purāṇas (Silver) = 34.417 gms	H - 37.21 M - 34.89 T - 35.96



T A B L E - II (contd.)

A survey of the weights from Chanudaro

Group	No of specimens	Range (in Gram)	Average weight (in Gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
PAE 13	2 <sup>d</sup>	42.88-45.55	44.22	13 Purāṇas (Silver)	13 Purāṇas (Silver) = 3.4417 gms x 13 = 44.7421 gms	T - 43.44
PAE 16	11 <sup>d</sup>	49.68-57.17	53.33	16 Purāṇas (Silver)	16 Purāṇas (Silver) = 3.4417 gms x 16 = 55.0672 gms	H - 53.52 M - 54.44 N - 54.82 T - 53.45
ŚAŚ 2	2 <sup>d</sup>	60.93-69.61	65.27	2 Śatamāṇas (Silver)	2 Śatamāṇas (Silver) = 34.417 gms x 2 = 68.834 gms.	H - 64.4 N - 69.1 T - 69.67
ŚAŚ 4	8 <sup>d</sup>	120.88-135.65	131.45	4 Śatamāṇas (Silver)	4 Śatamāṇas (Silver) = 34.417 gms x 4 = 137.668 gms.	H - 130.65 N - 135.97 T - 126.3



TABLE - II

(contd.)

A survey of the weights from Chandudaro

Group	No of specimens	Range (in gms)	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the rele- vant Indian Weight (in gram)	Relevant average weight from other Indian sites (in gram)
ŚAŚ 5	1 <sup>d</sup>		185.04	5 Śatamāṇas (Silver)	5 Śatamāṇas (Silver) = 34,417 gms x 5 = 172,085 gms	
ŚAŚ 8	2 <sup>d</sup>	260.52-273.59	267.06	8 Śatamāṇas (Silver)	8 Śatamāṇas (Silver) = 34,417 gms x 8 = 275,336 gms	H - 263.5 M - 273.61 N - 284.3
ŚAŚ 12	1 <sup>d</sup>		392.76	12 Śatamāṇas (Silver)	12 Śatamāṇas (Silver) = 34,417 gms x 12 = 413,024 gms	T - 399.61
ŚAŚ 16	1		544.77	16 Śatamāṇas (Silver)	16 Śatamāṇas (Silver) = 16 x 34,417 gms = 550,672 gms	H - 546.7
ŚAŚ 39	1 <sup>d</sup>		1330.68	39 Śatamāṇas (Silver)	39 Śatamāṇas (Silver) = 34,417 gms x 39 = 1342,263 gms.	



TABLE - III

A survey of the weights from Nevasa

Serial No. of the group as tabulated by Sankarila	Group	No of specimens	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
17	Mau 8	3	4.6	8 māshas (Gold)	1 māsha (Gold) = 5 rakṣikas. = .10755 gm x 5 = .53775 gm 8 māshas (Gold) = .53775 gm x 8 = 4.302 gms	
16	Pāg 2	4	6.78	2 Purāṇas (Silver)	2 Purāṇas (Silver) = 8.4417 gms x 2 = 6.8834 gms.	IM - 6.805 C - 6.78 T - 7.06
15	Pāg 3	7	9.24	3 Purāṇas (Silver)	3 Purāṇas (Silver) = 3.4417 gms x 3 = 10.3251 gms	C - 8.30
14	Pāg 4	5	15.4	4 Purāṇas (Silver)	4 Purāṇas (Silver) = 3.4417 gms x 4 = 13.7668 gms	IM - 13.76 C - 13.82 T - 13.25



TABLE - III (Contd.)

A survey of the weights from Nevase

Serial No. of the group as tabulated by Sankalita	Group	No. of specimens	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
13	PAG 7	2	22.16	7 Purāṇas (Silver)	7 Purāṇas (Silver) = $3.4417 \text{ gms} \times 7$ = 24.0918 gms	
12	SAG 1	6	34.89	1 Śatamāṇa (Silver)	1 Śatamāṇa (Silver) = 10 Purāṇas (Silver) = 34.417 gms	H - 37.21 C - 32.74 T - 35.96
11	PAG 16	3	54.82	16 Purāṇas (Silver)	16 Purāṇas (Silver) = $3.4417 \text{ gms} \times 16$ = 55.0672 gms	H - 53.52 M - 54.44 C - 53.33 T - 53.45
10	SAG 2	4	69.1	2 Śatamāṇas (Silver)	2 Śatamāṇas (Silver) = $34.417 \text{ gms} \times 2$ = 68.834 gms	H - 64.4 C - 65.27 T - 69.67



TABLE - III (Contd.)

A survey of the weight from Nevase

Serial No. of the Group as tabulated by Sankalia	Group	No of specimens	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
9	Śāg 3	5	105.32	3 Śātamāṇas (Silver)	3 Śātamāṇas (Silver) = 34,417 gms x 3 = 103,251 gms	M - 96,476
8	Śāg 3	2	110.11	3 Śātamāṇas (Silver)	3 Śātamāṇas (Silver) = 34,417 gms x 3 = 103,251 gms	M - 96,476
7	Śāg 4	2	126.3	4 Śātamāṇas (Silver)	4 Śātamāṇas (Silver) = 34,417 gms x 4 = 137,668 gms	H - 130.65 M - 135.97 C - 126.3
6	Śāg 6	3	198.8	6 Śātamāṇas (Silver)	6 Śātamāṇas (Silver) = 34,417 gms x 6 = 206,502 gms	
5	Śāg B	2	281.3	8 Śātamāṇas (Silver)	8 Śātamāṇas (Silver) = 34,417 gms x 8 = 275,336 gms	H - 263.5 M - 273.61 C - 267.06



T A B L E - III (Contd.)

A survey of the weights from Nevase

Serial No. of the group as tabulated by Sankala	Group	No. of specimens	Average weight (in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
4	Śāg 9	2	314.3	9 Śatamāṇas (Silver)	9 Śatamāṇas (Silver) = 34.417 gms x 9 = 309.753 gms	
3	Śāg 10 or Dhau 1	2	346.3	10 Śatamāṇas (Silver) or 1 Dharaṇa (Gold)	10 Śatamāṇas (Silver) = 34.417 gms x 10 = 344.17 gms or 1 Dharaṇa (Gold) = 10 Palas (Gold) = 34.417 gms x 10 = 344.17 gms	
2	Śāg 14	2	488.07	14 Śatamāṇas (Silver)	14 Śatamāṇas (Silver) = 34.417 gms x 14 = 481.838 gms.	
1	Śāg 20 or Dhau 2	1	678.3	20 Śatamāṇas (Silver) or 2 Dharaṇas (Gold)	20 Śatamāṇas (Silver) = 34.417 gms x 20 = 688.34 gms 2 Dharaṇas (Gold) = 344.17 gms x 2 = 688.34 gms	



TABLE - IV

A survey of the weights from Taxila

Group	No of specimens	Range (in grain)	Average weight (in grain and in gm)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other site (in gram)
MAE 6	1d		19.98 grains = 1.28 gms	6 Māshas (Silver) = 12 rakṣakās	6 Māshas (Silver) = 21510 gm x 6 = 1,29060 gms	
P.A.B. 1	2d	51.5-52.38	51.94 grains = 3.37 gms	1 Purāṇa (Silver)	1 Purāṇa (Silver) = 3,4417 gms	HM - 3.45 C - 3.82
P.A.E. 2	1		109 grains = 7.06 grams	2 Purāṇas (Silver)	2 Purāṇas (Silver) = 3,4417 gms x 2 = 6.8834 gms	HM - 6.805 C - 6.78 H - 6.78
P.A.E. 4	5d	193-210	201.4 grains = 13.25 gms	4 Purāṇas (Silver)	4 Purāṇas (Silver) = 3,4417 gms x 4 = 13.7668 gms	HM - 13.76 C - 13.82 H - 15.4



TABLE - IV (Contd.)

A survey of the weights from Taxila

Group	No of specimens	Range (in grains)	Average weight (in grains and in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other site (in gram)
PAGE	5	409-430	418.2 grains = 27.10 gms	8 Purāṇas (Silver)	8 Purāṇas (Silver) = 3.4417 gms x 8 = 27.5336 gms	M - 27.385 H - 27.057 C - 27.320
S.E. 1	1		555 grains = 35.96 gms	10 Purāṇas (Silver) = 1 Satavāṇa (Silver)	1 Satavāṇa (Silver) = 34.417 gms	H - 37.21 C - 32.74 N - 34.89
PAGE 13	2	669-671.5	670.3 grains = 43.44 gms	13 Purāṇas (Silver)	13 Purāṇas (Silver) = 3.4417 gms x 13 = 44.7421 gms	C - 44.22
PAGE 16	54	803-844	824.8 grains = 53.45 gms	16 Purāṇas (Silver)	16 Purāṇas (Silver) = 3.4417 gms x 16 = 55.0672 gms	H - 53.52 M - 54.44 C - 53.33 N - 54.82



TABLE - IV (Contd.)  
A survey of the weights from Taxila

Group	No of specimens	Range (in grains)	Average weight (in grains and in gram)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indian sites (in gram)
SAE 2	1		1075 grains = 69.67 gms	20 Purāṇas (Silver) = 2 Satamāṇas (Silver)	2 Satamāṇas (Silver) = 34.417 gms x 2 = 68.834 gms	N - 64.4 O - 65.27 N - 69.1
SAE 3	4 <sup>d</sup>	1669-1686	1678 grains = 108.75 gms	3 Satamāṇas (Silver)	3 Satamāṇas (Silver) = 34.417 gms x 3 = 103.251 gms	
SAE 6	7 <sup>d</sup>	2927-3362	3132.4 grains = 203.01 gms	6 Satamāṇas (Silver)	6 Satamāṇas (Silver) = 34.417 gms x 6 = 206.502 gms	
SAE 12	11 <sup>d</sup>	5480-5486	6166 grains = 398.61 gms	12 Satamāṇas (Silver)	12 Satamāṇas (Silver) = 34.417 gms x 12 = 413.004 gms	C - 392.76



TABLE - IV (Contd.)

A survey of the weights from Taxila

Group	No of specimens	Range (in grains)	Average weight (in grains and in gm)	Relevant Indian weight	Theoretical weight of the relevant Indian weight (in gram)	Relevant average weight from other Indi site (in gram)
ŚAś 15	3d	7896-8306	8060 grains = 522.35 gms	15 Śatamaṇas (Silver)	15 Śatamaṇas (Silver) = 34.417 gms x 15 = 516.255 gms	
ŚAś 18	1d	9304	9304 grains = 602.98 gms	18 Śatamaṇas (Silver)	18 Śatamaṇas (Silver) = 34.417 gms x 18 = 619.506	



TABLE - V

Comparison of a Mohenjodaro scale with ancient Indian scale

No. of Markings	Mohenjodaro scale Length from the origin (in inch.)	Relevant Indian Scale	Remarks
1	.264	2 Yavas	Considering 6 Yavas = 1 Angula and 24 Angulas = 1 Hasta = 19" We have 2 Yavas = $\frac{19 \times 2}{24 \times 6}$ inch = .264 inch. and 1 Angula = .264 inch x 3 = .792 inch.
2	.528	4 Yavas	
3	.792	6 Yavas = 1 Angula	
4	1.056	8 Yavas = 1 Angula 2 Yavas	
5	1.320	10 Yavas = 1 Angula 4 Yavas	
6	1.584	12 Yavas = 2 Angulas	
7	1.848	14 Yavas = 2 Angulas 2 Yavas	
8	2.112	16 Yavas = 3 Angulas 4 Yavas	
9	2.375	3 Angulas	



## SECOND SCALE

SECOND SCALE					
No. of Markings	Harappan scale		Relevant Indian scale	Exact length of Indian scale (in inch.)	R e m a r k s
	Length from the origin (in inch.)				
1		.3780	4 Yavas	.375	Considering 8 Yavas = 1 Angula and 24 Angula = 1 Hast = 18" We have 4 Yavas = .375" and 1 Angula = .75 inch.
2		.7343	8 Yavas = 1 Angula	.75	
3		1.1063	1 Angula 4 Yavas	1.125	
4		1.4705	2 Angulas	1.500	

48823

TABLE - VI

Comparison of a Harappan scale with ancient Indian scale



REFERENCE

1. Mohenjodaro and the Indus civilization Vol.II. Systems of weights at Mohen-jodaro, p.590.
2. Mohenjodaro and the Indus civilization Vol.II. Systems of weights at Mohenjodaro, Hemmy, p.591.
3. Ibid, p.594
4. 1) Graves C.H. Manava-Dherma-Sastra  
Vol.I (for Sanskrit Text) Chapter Eighth. Slokas  
- 134 - 137.

सर्षपाः षडयवो मध्यस्त्रियवन्नेव कृष्णालम् ।  
 पंचकृष्णालको मासस्ते सुवर्णशुषौडशः ॥  
 पलं सुवर्णीयमत्रातः पलानि धतूणद्वयम् ।  
 द्यूकृष्णले समधृते विज्ञेयौ रौप्यमाषकः ॥  
 तेषोडशस्याद्व्यारुणसुराण्यैव राजतः ।  
 काषीपणस्तु विज्ञेयस्ताम्रिकः काषिकः पद्माः ॥  
 धतूणानि दश ज्ञेयः शतमानसुराजनः ।  
 चतुः सौवर्णिको निष्को विज्ञेयस्तु प्रमाणतः ॥



ii) Asiatic Researches .. Vol.V

"On Indian Weights and Measures"

iii) Numismata Orientalia - E Thomas

p.13, Table III

iv) Antiquities of India - Barnett, p.206.

5. This is taken from the Gold Standard to explain the heavy weights of Mohenjodaro and Harappa. If the modification be avoided, those heavy weights can also be explained in terms of Satamāṇas.
6. From history to pre-history at Nevasa Sankalia H.D.  
Deo. Ansari, Ehrhardt, p.477.
7. Mohenjodaro Excavations. Mackay, p.237.
8. Taxila Vol.II - Marshall, pp.508-512.
9. Excavations at Harappa M.S.Vats, p.365.
10. i) Asiatic Researches, Vol. V.  
On Indian weights and Measures. Colebrooke, p.103.



- 11) अङ्गुलः - "अष्टमर-परिमाणम् । प्रत्यक्ष-  
- दीर्घायां वाच्यमिति ।" Cited from *सामान्यतन्त्रः* ।"  
111) अङ्गुल - "यदेवाष्टमर-परिमाणम् अङ्गुलः ।"

iv) Yava - "A measure of length equal to 1/6 or 1/8 of an angula" The Student's Sanskrit Eng. Dictionary, V.S. Apte p.455.

11. Excepting the reference of Apte I have been unable to find out this relation in any standard literature. Yet I have considered this equivalence on account of the fact that one Indus Scale fits well with this description.

A Jain Ganita refers :- 4 Yavas = 1 angula;  
4 Angulas = 1 Mushti; 4 mushtis : = 1 hasta.  
(Antiquities of India - Barnett p.218)

12. Further Excavation at Mohenjodaro - Mackay Vol.I, p.404;  
Excavations at Harappa - Vats MS, Vol.I, p.365.

13. Excavations at Harappa - Vats MS, Vol.I, pp.365-366.

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TENTATIVE DECIPHERMENT OF THE INSCRIPTIONS OF THE  
SEALS OF HARAPPA AND MOHENJODARO

(Abbreviations used in the decipherment tables. A, B, C and D:-

Mc = E. Mackay :- Further excavations at Mohenjodaro Vol.II.

MI = Sir John Marshall - Mohenjodaro and the Indus civilization Vol.III.

The inscriptions marked with numbers alone indicate the museum numbers of the seals, as tabulated by Mr. M.S.Vats in the report 'Excavations at Harappa' Vol.II).

The language of the inscriptions of the seals of Harappa and Mohenjodaro is sanskritic. Generally Aryan personal names (and place names) are inscribed on the seals. Combinations of two names and more than two names are also found to a lesser extent.

Just like the ancient coins on which 𑀘𑀓𑀭𑀺𑀓𑀭𑀺𑀓𑀭𑀺 (Maharajasa = Maharajasya), 𑀘𑀓𑀭𑀺𑀓𑀭𑀺𑀓𑀭𑀺 (Bishnudevasa = Bishnudevasya) etc. are written these seals are also embodied with 𑀘𑀓𑀭𑀺𑀓𑀭𑀺𑀓𑀭𑀺 (Dharmasa = Dharmasya) 𑀘𑀓𑀭𑀺𑀓𑀭𑀺𑀓𑀭𑀺 (Dhara = Dharasya) i.e. this is possessed by Dharmma, this is possessed by Dhara etc.

The most important code for the decipherment of the Indus seals is the unnecessary repetition of the same alphabet twice, three or more times, most probably for decorative purpose :- e.g.

गं गं जं गं गं -A जं गं गं - ५ जं  
 11381

$\begin{matrix} \text{श. ज. म.} \\ \uparrow \downarrow \parallel \diamond \end{matrix} ; \begin{matrix} \text{श. ज. B. म.} \\ \uparrow \downarrow \uparrow \parallel \diamond \end{matrix} ; \begin{matrix} \text{श. ज. म.} \\ \uparrow \downarrow \parallel \odot \end{matrix}$   
 Ms 551                      Ms 523                      Ms 132

ध म - ८      ध न - -      ध ण - -  
 २५ १३ ; २५ १३ ; २५ १३ १३ १३ ; १३ १३ १३ १३  
 Me 313      Me 309      10137

[illegible]



## 1. Compound Alphabet from the Seals of H and M

NO	Compound Constituent Alphabet	Constituent	Constituent	Constituent
1				
2				—
3				—
4				—
5				—
6				—
7				—
8				—
9				—
10				—
11				—
12				—
13				—
14				—
15				—
16				—







2. Proposed phonetic values to the omicron\* inscriptions

NO	Indus script symbols	Variants	Phonetic value	Remarks.
13			YA(य)	Sometimes, the symbols have been used for A. (अ).
14			RA(र)	
15			LA(ल)	
16			SA(स)	

3. A tentative resemblance with Brāhmī script

Alphabet of Hatha and Mohan Yodans	Developmental Stage	Relevant Brāhmi Alphabet
E	≡	YA, YI, A, Ā
☆	∟ (imaginary stage)	VA, 57
⊗	⊗	SA 57
oto.	oto	VA, 57
≡	≡	MA 57
≡	≡ → ≡ (imaginary stage)	BHA 57
⊗	⊗	DA 57
∞	∞ ∞	YA 57



A

DHA-RMMA ॐ ॐ ॐ	Mc CIII 107	DHARMMA धर्म्म	Ā-NATTAJA ॐ ॐ ॐ	Mc 147	आनर्त्तज ĀNARTTAJA
धर्म्म ॐ ॐ ॐ	Mc 154	धर्म्म	आनर्त्त ॐ ॐ ॐ	Mc 139	आनर्त्त <sup>2</sup> ĀNARTTA
DHA-MMA ॐ ॐ ॐ	Mc 421	DHARMMA वर्म्म	Ā-NA-TTA ॐ ॐ ॐ ॐ ॐ	Mc 168	धूमज DHŪMAJA
VA-MMA ॐ ॐ ॐ ॐ ॐ	Mc 178	VARMMA धर्म्मध्वज	DH-Ū-NA-JA ॐ ॐ ॐ ॐ ॐ	Mc 244	मय BHAYA
DHA-RMMA-DVA-JA ॐ ॐ ॐ ॐ ॐ	Mc 201	DHARMMAVJA धर्	BHA-YA ॐ ॐ ॐ ॐ ॐ	Mc 289	अगस्य AGASYA
DHA-RA ॐ ॐ ॐ	Mc 22	DHARA ध्वज	A-GA-SA ॐ ॐ ॐ ॐ ॐ	Mc 348	धर्म्मिना DHARMANĀGA
धर्म्म ॐ ॐ ॐ ॐ ॐ	Mc 341	DVAJA धर्म्ममार्का	DHA-RMMA-NĀGA ॐ ॐ ॐ ॐ ॐ	Mc 150	धनमय DHANAMAYA
DHA-RMMA-A-JA ॐ ॐ ॐ ॐ ॐ	Mc 102	DHARMMAKĀJA धर्म्मिनाज	DHA-NĀ-NA-YA ॐ ॐ ॐ ॐ ॐ	Mc 380	धूम DHŪMA
DHA-RMMA-SA ॐ ॐ ॐ ॐ ॐ	Mc 65	DHARMMAJA धर्म्मज	DH Ū MA ॐ ॐ ॐ ॐ ॐ	Mc 444	अधूम ADHŪMA
DHA-RMMA-JA ॐ ॐ ॐ ॐ ॐ	Mc CT. 13	DHARMMAJA धर्म्मशा	A DH Ū MA ॐ ॐ ॐ ॐ ॐ	Mc 521	धनगज DHANAGAJA
DHA-RMMA-NĀ ॐ ॐ ॐ ॐ ॐ	Mc 261	DHARMMAĀNĀ अज, राजा	DHA-NA-GA-JA ॐ ॐ ॐ ॐ ॐ	Mc 590	गणस्य GAṆASYA
अज ॐ ॐ ॐ	Mc 688	RĀJĀ धन	GA-NA-SĀ ॐ ॐ ॐ ॐ ॐ	Mc 604	नर NARA
A-JA ॐ ॐ ॐ	Mc 689	DHANA ध्यानज	NA-A ॐ ॐ ॐ ॐ ॐ	Mc 684	अनार्यज ANĀRYYAJA
DHA-NĀ ॐ ॐ ॐ ॐ ॐ	Mc 702	DHYĀNAJA जनदेव	A NA RYĀ-JA ॐ ॐ ॐ ॐ ॐ	Mc 150	अमय ABHAYA
DHA-YA-NA-JA ॐ ॐ ॐ ॐ ॐ	Mc 5	JANĀDEVA गज	A BHAYA ॐ ॐ ॐ ॐ ॐ	Mc 2728	धनकस्य DHANAKASYA
यनदेव ॐ ॐ ॐ ॐ ॐ	Mc 26	GAJA गण	DH-NA-GA-SA ॐ ॐ ॐ ॐ ॐ	Mc 201	धर्त्त DHĀRTTA
YA-NA-DA-YA ॐ ॐ ॐ ॐ ॐ	Mc 60	GAṆA मयस्य	DHA-RA-NĀ ॐ ॐ ॐ ॐ ॐ	Mc 10185(6)	दसनस्य DAŚANASYA
गज ॐ ॐ ॐ ॐ ॐ	Mc 89	GAṆA धर	VA-NA ॐ ॐ ॐ ॐ ॐ	Mc 12002	वन VANA
GA-JA ॐ ॐ ॐ ॐ ॐ	Mc 101	GAṆA गणज			
GA-NĀ ॐ ॐ ॐ ॐ ॐ					
BHA-YA-SA ॐ ॐ ॐ ॐ ॐ					
मयस्य ॐ ॐ ॐ ॐ ॐ					
धर्म्म ॐ ॐ ॐ ॐ ॐ					
DHA-LA ॐ ॐ ॐ ॐ ॐ					
यनग ॐ ॐ ॐ ॐ ॐ					



गजसैन GA-JA-SA-NA ५१०१	गजसैन GAJASENA ५१०१	ध-अनअ DHA-A-NA-A ५१०१	MC	DHARA-NARA
धन DVA-NA ५१८४२	धन DVANA ५१८४२	अनअ A-NA-DHA-NA ५१८४२	MC	राधन RAADHANA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	अगदेन AGADENA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	जाना JANA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	जन
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	गोधनक GODHANAKA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	नवधन NARTTADVAYA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	अधन ADHANA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	NARA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	नव
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	भयदा BHAYADA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	धरस्य DHARASYA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	दास DASA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	ADHA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	अध (ः)
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	गद, गध GADA, GADHA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	वर्षकनगस्य VARSAKA-NAGASYA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	गण GA-NA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	धरनयज DHARA-TANA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	धनज DHVANAJA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	नवस्य NARASYA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	दासज DASAJA
नअसैन NA-A-DA-SA ५१८४२	नअसैन NARADASYA ५१८४२	अनअ AGA-DA-NA ५१८४२	MC	दासज DASAJA



ध - ना - - - YA	Mc धनज	GA-DHA- GA-YA	Mc गद्य गज
३३ DHANAJA	गद्य - गय	64	GADHA GAJA
ग न - - -	Mc GANA	ध - ना - - -	Mc धरुख्य
34	गण	DHA-RA-SSA	66 DHARASYA
GA-NA- -	अधः	GA-DHA-NA - SYA	Mc गौधनख्य
अ - ध -	35	ADHA	68 GADHANA
A - DHA-	नागज	गद्य ज - ख्य	- SYA
न य GA- JA	Mc	ध - GA- - DHA	Mc दग्ध
YIE	38	DHA-GA-DHA	71 DAGDHA
ना GA ज	Mc	स्व ग	Mc
ध - न -	39	SSA-GA	72
DVA-NA-	Mc	गण - न	Mc
४०	DHARA	GA-NA-NA	75
DHA-RA	ध्यान	अ य गद्य	Mc
ज य ध	Mc	७७	77
NA - YA-DHA	DHYANA	A - YA-GA-DHA	Mc
A - JA-GA-A	Mc	ध स - ना - स	Mc
४३	AGARA	DHA-SA - NA-SA	79
अ - ज ग - अ	धरुख्य	न अ - स	Mc
४५	DHARASYA	NA-A-SA	80
DHA-RA-SYA-YA	मयनाशज	गण - - स	Mc
म य ग - य स	BHAYANA	GA-NA - - SA	81
४६	DHANAGANENA	ध अ य	Mc
DHA-NA-GA-NA-NA	गण	DVA-A-YA	82
ज ग	Mc	४७	83
GA-NA	धूमनास	- ध य न ध य न	Mc
४८	DHUMANASA	DHA-YA-NA-DHA-NA-SA	84
DH U NA-NASA	धूलदख्य	YA - NA - DHA-RA	Mc
५०	DHULADASYA	य ज - ध इ	84
DHU U LA-DHA-SA-SA	धरुख्य	ध स ग	Mc
५१	SI DHARASYA	DHA-SA - NA	87
DHA-RA SSA	मयनाशक	५२	88
म य ग - - स	BHAYANASAKA	SSA-GYA	88
५३	DHARAGANA	अ ज न	Mc
DHA-RA-GA-NA - SA	५४	ANANA	90
न य ध	ध्यान	ध य - ग	Mc
५५	DHYANA	DHA-YA-NA	91
NA-YA-DHA	धरण	अ ग स	Mc
५६	DHARAGANA	५७	92

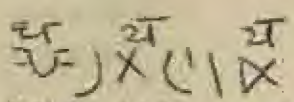
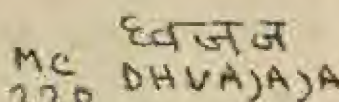
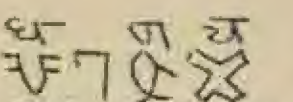
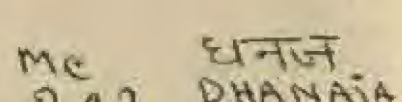
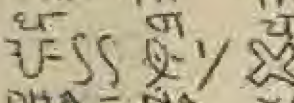
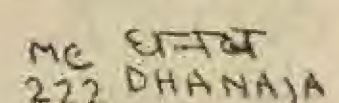
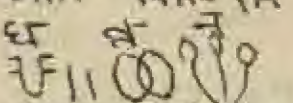
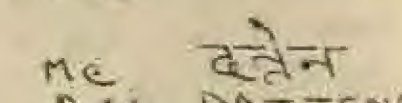
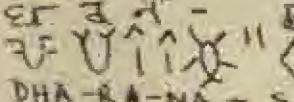
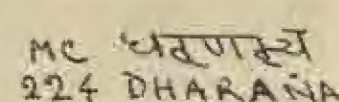
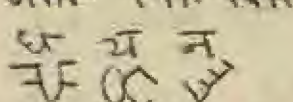
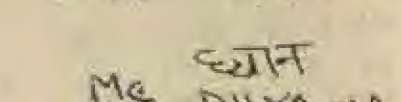
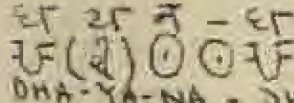
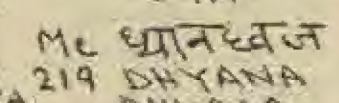
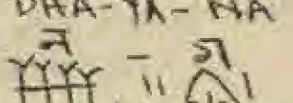
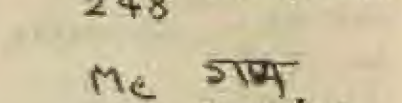
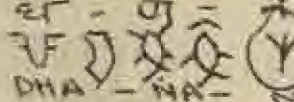
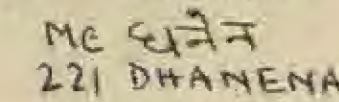
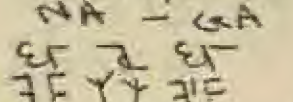

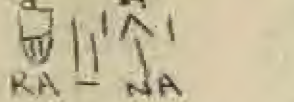
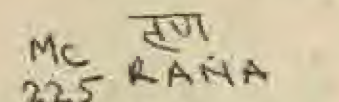
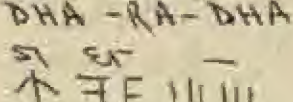
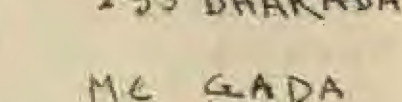
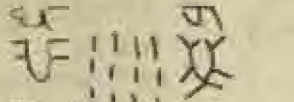
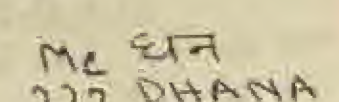
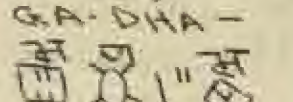
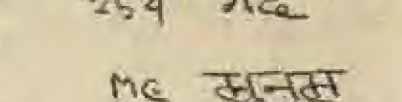
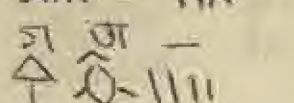
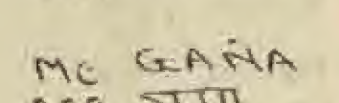
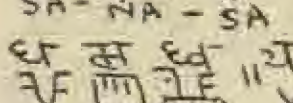
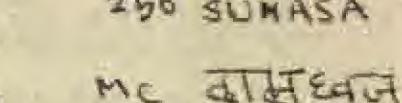
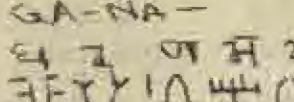
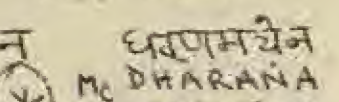
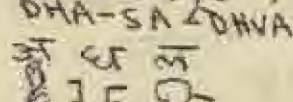
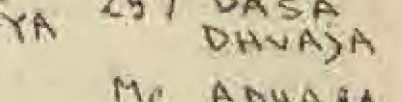
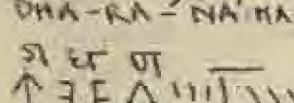
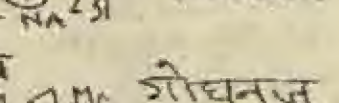
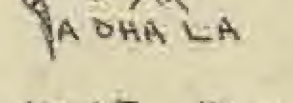
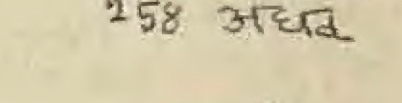
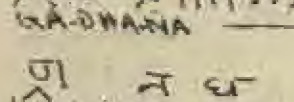
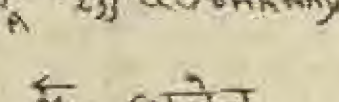
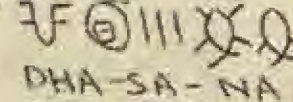
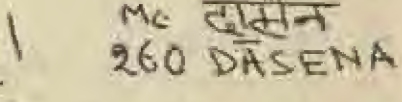
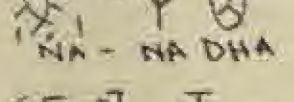
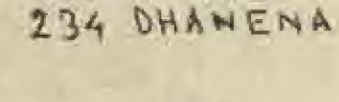
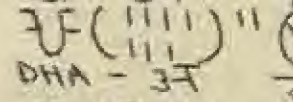
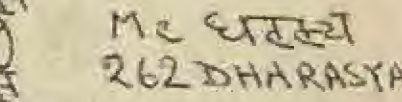
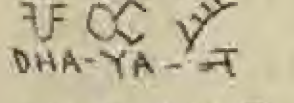
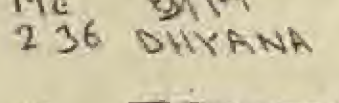
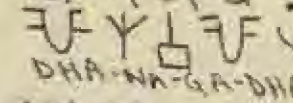
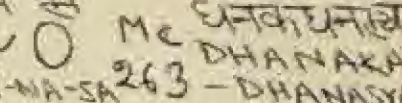
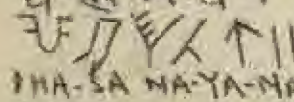
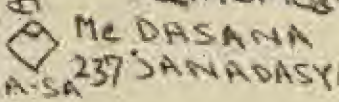
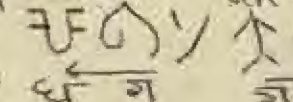
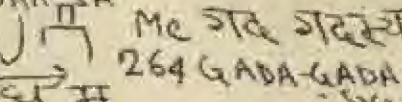
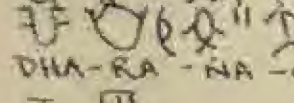
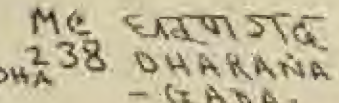
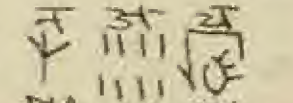
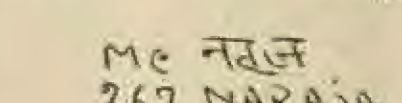
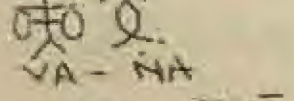
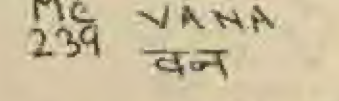
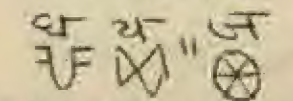
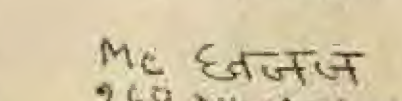
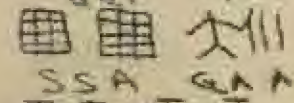
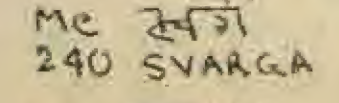


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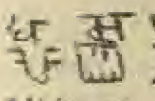
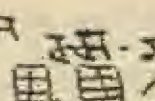
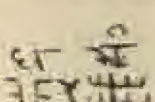
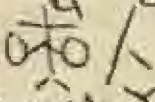
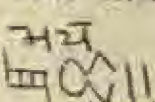
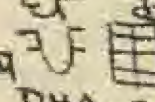
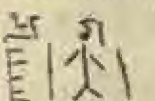
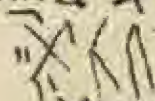
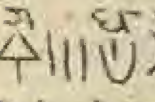
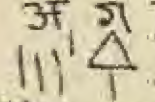
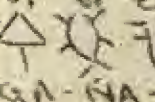
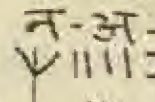
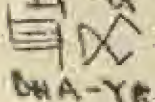
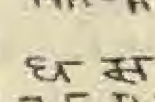
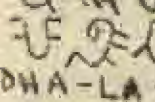
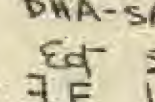
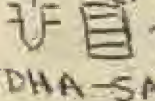
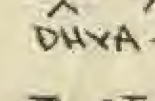
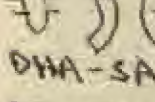
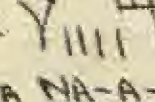
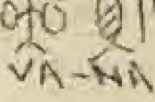
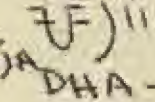
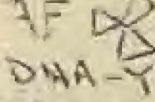
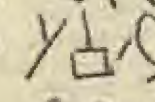
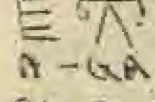
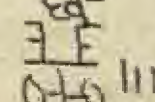
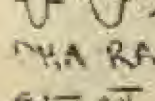


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DHA-A-NA-YA 162	DHARANA 162	VA-NA 186	वन् YANA
DHA-A-BHA-YA 163	DHARA - BHAYA 163	SA 187	यशः YASA
DHA-RA-NA-MMA 166	DHARA - NARMMA 166	NATTA GA 192	नर्तकी NARTT AKA
A-A-NA 167	ARANA 167	GA NA - DHA-A 193	गन्धर्वा GANDH ARA.
DHVA-NA 170	DHVANA 170	A-NA-NA 196	आनन ANANA
GA-NA 171	GA-NA 171	DHA-GA-NA DHA-NA 197	गन्धर्वा GANDHENA DHANA
DHA-YA-NA NA-A 174	DHYANA - NARA 174	NA-AT-YA 198	नरज NARAJA
A NA NA 175	AN-NA 175	DHA-NA 200	धन DHANA
JANA-GA 176	GANAJA 176	DHA-YA-RA-SA 202	धर्या DHAR YASYA
GA-NA-LA-SA 177	GANDHA - RASYA 177	DHA-NA-NA MA-YA-NA 204	अजगन्ध AJA GA TTA.
YA-NA-DHA-RATTANNA SA 178	JANA, DHA DHA-YA NA MA DHA-NA 178	MA-YA-NA MA-YA-NA 205	धर्या DHARA TANMAYE NA
NA-A-SA 180	ROTANNA 180	GA-NA-NA JA-DHA 207	गोधन GO DHAN
DHA-LA 181	DHARA 181	DHA-RA-AT-DHA 208	धज DHARA DHARA
GA-NA 182	GA-NA 182	DHA-NA 214	गन्ध GANDH ASA
GA NA MA-YA 183	GANAMAYA 183	NA-AT 215	नर NARA
GA-NA MA-YA 184	DHARANA 184	DHA-RA-NA-NA 216	धर्या DHARA NAM



<p>   DHA YA YA </p>	<p>   220 DHVAJA JA </p>	<p>   DHA - NA - YA </p>	<p>   243 DHANA JA </p>
<p>   DHA - NA YA </p>	<p>   222 DHANA JA </p>	<p>   DHA - TTA - NA </p>	<p>   246 DATTE NA </p>
<p>   DHA - RA - NA - SA </p>	<p>   224 DHARA NA - SYA </p>	<p>   DHA - YA - NA </p>	<p>   248 DHYA NA </p>
<p>   DHA - YA - NA - DHA - YA </p>	<p>   219 DHYANA DHVA JA </p>	<p>   NA - GA </p>	<p>   250 GA NA </p>
<p>   DHA - NA - NA </p>	<p>   221 DHANENA </p>	<p>   DHA - RA - DHA </p>	<p>   253 DHARADA </p>
<p>   RA - NA </p>	<p>   225 RA NA </p>	<p>   GA - DHA - </p>	<p>   254 GADA </p>
<p>   DHA - NA </p>	<p>   227 DHANA </p>	<p>   SA - NA - SA </p>	<p>   256 SUMASA </p>
<p>   GA - NA - </p>	<p>   229 GA NA </p>	<p>   DHA - SA - DHVA - YA </p>	<p>   257 DASA DHVA JA </p>
<p>   DHA - RA - NA - NA - YA - NA </p>	<p>   231 DHARA NA - MAYENA </p>	<p>   A DHA LA </p>	<p>   258 ADHARA </p>
<p>   GA - DHANA </p>	<p>   233 GA DHANA JA </p>	<p>   DHA - SA - NA - </p>	<p>   260 DASENA </p>
<p>   NA - NA DHA </p>	<p>   234 DHANENA </p>	<p>   DHA - NA </p>	<p>   262 DHARASYA </p>
<p>   DHA - YA - NA </p>	<p>   236 DHYANA </p>	<p>   DHA - NA - GA - DHA - NA - SA </p>	<p>   263 DHANAKA - DHANASYA </p>
<p>   DHA - SA - NA - YA - NA - DHA - SA </p>	<p>   237 DASANA SANADASYA </p>	<p>   GA DHA SA </p>	<p>   264 GADA - GADA - SYA </p>
<p>   DHA - RA - NA - GA - DHA </p>	<p>   238 DHARA NA - GADA </p>	<p>   NA - A - YA </p>	<p>   267 NARA JA </p>
<p>   VA - NA </p>	<p>   239 VANA </p>	<p>   DHA - YA - JA </p>	<p>   268 DHVA JA JA </p>
<p>   SSA GA A </p>	<p>   240 SVARGA </p>	<p>   NA - TTA </p>	<p>   270 NARTTA </p>
<p>   NA - GA - SA - LA </p>	<p>   241 NAGASARA </p>		



 DHA-SA NA - - NAGA 271	नगमज दसन नगेशज DASA NA NAGESA NA 271	 SSA-GA-A-DHA-NA 292	स्वर्गगत MC SVARGA- GADA
 DHA-RMA-NA 272	धर्मज DHARMA NA VA-YA 272	 VA-YA 293	वज्र MC VAJRA 293
 BHA-YA    DHA-NA-NA-YA 273	भय धनमय BHAYA DHA-SA-SA DHANAMAYA 273	 DHA-SA-SA 294	दासस्य MC DASA SYA 294
 A-GA 274	अग AGA 274	 YA-NA-DHA-NA 295	जनधन MC JANADHA NA 295
 GA-DHA-NA-NA 275	गोधनेन GODHANENA 275	 A-GA-NA-SA 297	अगणस्य MC AGANASYA 297
 GA-NA-DHA-GA-SA 280	गन्धकस्य GANDHAKA SYA 280	 NA-A-DHA 298	नारद MC NARADA 298
 DHA-YA-DHA-NA-SA 281	भयधनस्य BHAYADHA -NASTYA 281	 DHA-SA-DHA-NA-GA 300	दशधनस्य MC DASADHA -NAKA 300
 DHA-LA-NA-MA-YA 282	धरणमय DHARANA -MAYAS 282	 DHA-NA-MA-YA 304	अध्वगस्य MC ADHVA GA -SYA 304
 DHA-SA-GA- 283	दशगव DASAGA 283	 NA-A-MA-DHA-YA-SSA 301	नरमध्यास्य MC NARAMA- DHYA SYA 301
 DHA-SA-NA-DHA-NA-DHA- 284	दसनधनद DASANA DHANADA 284	 DHA-NA-JA 302	धनज MC DHANAJA 302
 VA-NA-JA-DHA 286	वनध्वज VANA-DHVAJA 286	 GA-NA 303	गण MC GANA 303
 DHA-YA-LA-SA 288	ध्वजालस्य DHVAJALA -SYA 288	 GA-NA 305	ध्वनध्वन MC DHVANA -DHVAJA 305
 A-GA-SA 289	अगस्य AGASYA 289	 DHA-NA-DHA-YA 291	धार MC DHARA -NIRASYA 291
 DHA-LA-NA 291	धार DHARA -NIRASYA 291		

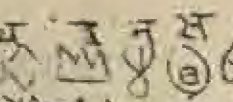
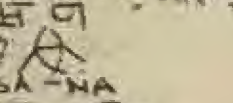
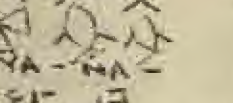
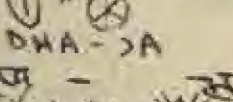
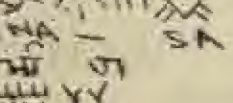
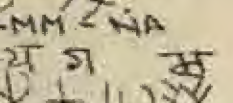
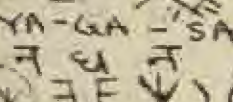
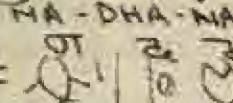
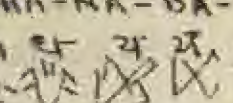
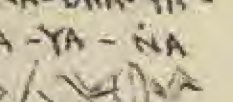
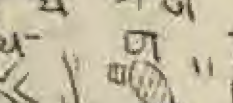
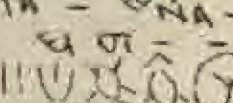
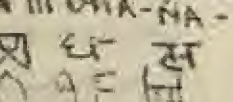
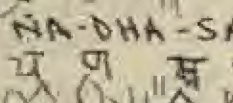
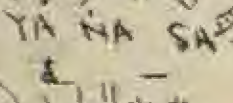
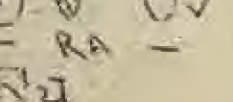

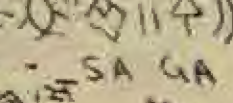

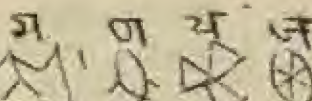
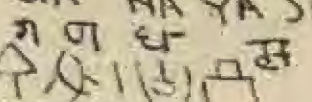
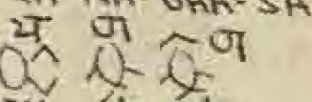
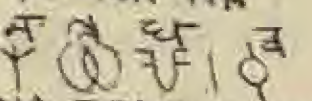
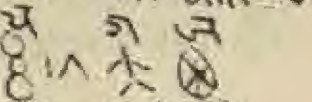
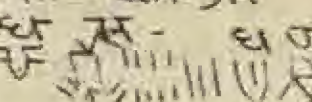
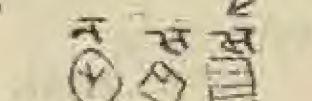
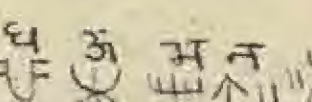
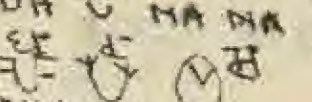
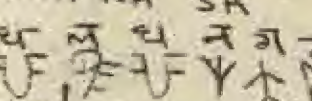
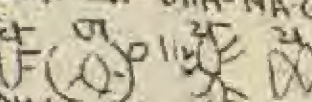
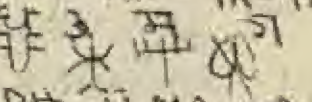
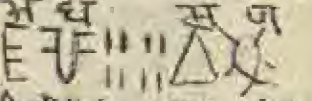
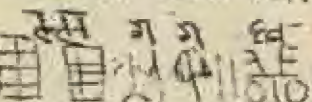
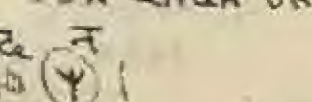
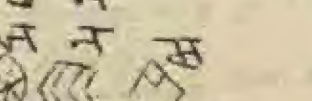
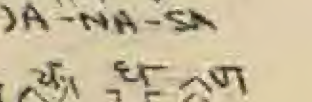
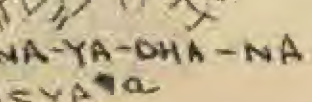


सुध्यान ॐ सुध्यान ॐ DHA DHA SA ॐ सुध्यान ॐ DHA-YA-YA	Mc 306 सुध्यान SUDHYANA	गोधूमनस ॐ गोधूमनस ॐ GA-DH U-MA-MA-SA	Mc 338 गोधूमनस GODHUMA NASYA
ध्वज ॐ ध्वज ॐ DHA-YA-YA	Mc 307 ध्वज DHVAJAJA	ध्वज ॐ ध्वज ॐ DHA-YA-YA	Mc 339 ध्वज DHVAJA YASA
दास ॐ दास ॐ DHA-SA	Mc 308 दास DASA	दास ॐ दास ॐ DHA-SA	Mc 340 नय जन NAYA-JANA
धनेन ॐ धनेन ॐ DHA-NA-NA	Mc 309 धनेन DHANENA	धनेन ॐ धनेन ॐ DHA-NA-NA	Mc 341 धरज DHARAJA
मय ॐ मय ॐ MA-YA	Mc 313 मय MAYA	मय ॐ मय ॐ MA-YA	Mc 342 अध्वज ADHVAGA
अध्वज ॐ अध्वज ॐ A-DHA	Mc 314 अध्वज ADHA	अध्वज ॐ अध्वज ॐ A-DHA	Mc 343 धननद्वय DHANANADA -SYA
धनेन ॐ धनेन ॐ DHA-NA-NA	Mc 315 धनेन DHANENA	धनेन ॐ धनेन ॐ DHA-NA-NA	Mc 344 ध्वज DHVAJA
नरज ॐ नरज ॐ NA-RA-YA	Mc 316 नरज NARAJA	नरज ॐ नरज ॐ NA-RA-YA	Mc 345 अदान ADANA
नरस्य ॐ नरस्य ॐ NA-RAS-YA	Mc 318 नरस्य NARASYA	नरस्य ॐ नरस्य ॐ NA-RAS-YA	Mc 346 अजज AJAJA
मयम ॐ मयम ॐ MA-YA-MA	Mc 319 मयम MAYAM	मयम ॐ मयम ॐ MA-YA-MA	Mc 347 अगज AGAJA
अद्वज ॐ अद्वज ॐ A-DHA	Mc 321 अद्वज ADHA	अद्वज ॐ अद्वज ॐ A-DHA	Mc 348 अगज AGAJA
ध्वन ॐ ध्वन ॐ DHA-NA-NA	Mc 322 ध्वन DHVANA	ध्वन ॐ ध्वन ॐ DHA-NA-NA	Mc 349 अद्वज ADHA
नद्वज ॐ नद्वज ॐ NA-DHA-NA	Mc 323 नद्वज NADA SENA	नद्वज ॐ नद्वज ॐ NA-DHA-NA	Mc 350 गौदसक GODASAKA
गणन ॐ गणन ॐ GA-NA-NA	Mc 324 गणन GANANA	गणन ॐ गणन ॐ GA-NA-NA	Mc 351 नरस्य NARASYA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 325 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 352 नरस्य NARASYA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 326 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 353 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 327 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 354 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 328 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 355 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 329 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 356 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 330 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 357 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 331 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 358 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 332 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 359 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 333 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 360 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 334 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 361 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 335 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 362 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 336 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 363 धनन DHANANA
धनन ॐ धनन ॐ DHA-NA-NA	Mc 337 धनन DHANANA	धनन ॐ धनन ॐ DHA-NA-NA	Mc 364 धनन DHANANA







<p>ध-य-न-स-ग    DHA-YA-NA-SA-GA    DHA-SA-NA    DHA-YA-NA    GA-DHA-JA    SA-GA-NA-SA    DHA-RM-NA    NA-YA-GA-SA    DHA-NA-DHA-NA-GA    GA-DHA-NA-DA-SA    DHA-NA-DHA-YA-GA    JA-SA-YA-NA    DHA-YA-NA-SA    DHA-LA-DHA-NA    VA-NA-DHA-SA    DH-U-YA-NA-SA-NA    NA-RA    BHA-YA    NA-SA-GA-GA    NA-SA-GA-GA</p>	<p>Mc धज  407 अंशक  Mc दसन  409 DASANA  Mc धान  410 DHYANA  Mc गदज  411 GADAJA  Mc सुगणस्य  413 SU  Mc धर्मण  414 DHARMHANA  Mc नायकस्य  415 NAYAKASYA  Mc धनधनज  418 DHANA-DHANAGA  Mc गोधनस्य  419 GODHANADA-SYA  Mc धनधनज  420 DHANA-DHYAJAKA  Mc यशः जन  422 YASA JANA  Mc ध्यानस्य  424 DHYANASYA  Mc धरधन  426 DHARADHANA  Mc वनदस्य  428 VANADASYA  Mc दुर्जनसेन  429 DURJANA-SENA  Mc नर  432 NARA  Mc भय  433 BHAYA  Mc गगमेन  436 GAGA-SENA  Mc गगमेन  435 GAGASYA</p>	<p>   GA-NA-YA-JA    GA-NA-DHA-SA    YA-NA-NA    NA-TTA-DHA-VA    YA-GA-JA    DHA-SA-DHA-YA    NA-SA-SA    DH-U-NA-NA-JA    DHA-RA-SA    DHA-LA-DHA-NA-GA-SA    DHA-NA-YA-YA-NA    DH-U-MA-GA    A-DHA-SA-NA    SSA-GA-GA-DHYANA-DHYANA    NA    JA-NA-SA    NA-YA-DHA-NA    NA-YA-DHA-NA    NA-YA-DHA-NA</p>	<p>Mc गणज  439 GANAYAJA  Mc गणदस्य  440 GANADASYA  Mc दनेन  441 DANENA  Mc ननदेव  443 NARTTA-DEVA  Mc अगज  445 AGAJA  दशधनजन  Mc DASADHANA  JANASYA  446  Mc धूमनज  447 DHUMANAJA  Mc धरस्य  450 DHARASYA  Mc धरधनस्य  449 DHARA-DHANAKA-SYA  Mc धनज जन  451 DHANAJA  Mc धूमक  453 DHUMAKA  Mc अधसेन  457 ADHASENA  Mc सुगधन  461 SVARGA-DHYANA  Mc दान  464 DANA  Mc जनस्य  468 JANASYA  Mc नयधन  469 NAYA-DHANA</p>
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ग - ध - म  
GA - DHA - SA

ध - ध - म  
DHA - DHA - SA

ध - अ - म - म  
DH - A - MA - SA

ध - म - म - म  
DHA - SA - SA - SA

ध - न - म - म  
DHA - NA - SA - SA

ध - अ - म - म - म  
DH - A - MA - SA - SA

ग - म - म - म  
GA - MA - SA - SA

ध - र - म - म - म  
DHA - RA - TTA - YA - SA

ध - न - म - म - म  
DHA - NA - GA - SA

ध - अ - ध - म - म  
DHA - A - DHA - YA - SA

ध - म - म - म - म  
DHVA - JA - SA - NA - GA - NA - SA

ध - न - म - म - म  
DHA - YA - NA - SA - NA - SA

ध - म - म - म - म  
DHA - YA - NA - SA - NA - SA

ध - म - म - म - म  
DHA - YA - NA - SA - NA - SA

ध - म - म - म - म  
DHA - KA - SA - NA - SA

Mc गदस्य  
470 GADASYA

Mc ध्वजस्य  
471 DHVAJASYA

Mc धूमस्य  
476 DHUMASYA

Mc दासस्य  
478 DĀSASYA

Mc धनज  
480 DHANAJA

Mc धूलोत्ता  
481 DHULOTTAMA

Mc ग्रासस्य  
485 GRĀSASYA

Mc धरत्रज  
486 DHARATTRAJA

Mc धनक  
489 DHANAKA

Mc धारा  
492 DHARA

Mc ध्वज  
493 DHVAJA

Mc सुनग्नस्य  
495 SUNAGNASYA

Mc ध्यान  
496 DHYANA

Mc ध्यानज  
498 DHYANAJA

Mc धार  
499 DHARA

ग - ध - म  
GA - DHA - SA

ध - म - म - म  
DHA - SA - NA - SA

ग - न - म - म  
GA - NA - SA - SA

ध - म - म - म  
DHA - SA - NA - SA

ध - म - म - म  
DHA - YA - YA - SA

ग - ध - म - म  
GA - DHA - NA - SA

ध - म - म - म  
DHA - NA - DHA - SA

ग - ध - म - म  
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GA - DHA - NA - SA

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GA - DHA - NA - SA

Mc गद  
501 GADA

Mc दासन  
502 DASANA

Mc गणस्य  
504 GANASYA

Mc दासन  
506 DASANA

Mc ध्वज  
505 DHVAJA

Mc गोधनस्य  
507 GODHANA - SYA

Mc धनद  
517 DHANADA

Mc नदध्वजस्य  
522 NADADHVAJASYA

Mc गोधन  
524 GODHANA

Mc गणस्य  
525 GANASYA

Mc नर  
525 NARA

Mc धून  
526 DHUNA

Mc जनसेन  
528 JANASENA

Mc धूमस्य  
533 DHUMASYA

Mc धनेन  
534 DHANENA

Mc गणज  
536 GANAJA



ध-ल-न-ग-न ॐ ॐ ॐ ॐ ॐ ॐ DHA-LA-NA-GA-NA	538	धरुण गण Mc DHANAGANA ॐ ॐ ॐ ॐ ॐ ॐ GA-DHA-NA-JA	567	गौधनज Mc GODHANA -JA
ग-न-ध-य-म-न ॐ ॐ ॐ ॐ ॐ ॐ GA-NA-DHA-YA-SA-NA	539	गण ध्वजमेन Mc GANA DHVA)ASENA	568	वनगह्य Mc VANAGA -SYA
अ-ध-अ ॐ ॐ ॐ ॐ ॐ ॐ A-DHVA-A	540	अध्वर Mc ADHVARA ॐ ॐ ॐ ॐ ॐ ॐ A-YA-JA	569	अजज Mc AJAJA
अ-य-ध-ग-म-य ॐ ॐ ॐ ॐ ॐ ॐ A-YA-DHA-NA-HA-YA	541	अज धनमय Mc AJA-DHANANA -MAYA	570	नरज Mc NARAJA
न-अ-स ॐ ॐ ॐ ॐ ॐ ॐ NA-A-SA	542	नरस्य Mc NARASYA ॐ ॐ ॐ ॐ ॐ ॐ DHA-RSA	571	धरस्य Mc DHARSA DHVA)A
भ-य-ण-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-NA-SA	543	भयनस्य Mc BHAYANA -SYA	572	गौधनस्य Mc GODHANA -SYA
ध-ग-न ॐ ॐ ॐ ॐ ॐ ॐ DHVA-NA	544	ध्वज Mc DHVANA ॐ ॐ ॐ ॐ ॐ ॐ GA-DHA	573	गद Mc GADA
भ-य ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA	545	भय Mc BHAYA ॐ ॐ ॐ ॐ ॐ ॐ DHA-YA-GA-NA-JA	574	ध्वजगणज Mc DHVAJA GANAJA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	546	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	575	धनज Mc DHANAJA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	547	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	576	अयस्य Mc AYASA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	548	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	577	धरस्य Mc DHARASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	549	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	578	गदवर्ज Mc GADAVARJANA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	550	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	579	धनन Mc DHANANA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	551	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	580	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	552	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	581	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	553	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	582	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	554	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	583	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	555	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	584	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	556	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	585	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	557	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	586	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	558	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	587	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	559	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	588	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	560	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	589	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	561	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	590	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	562	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	591	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	563	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	592	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	564	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	593	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	565	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	594	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	566	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	595	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	567	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	596	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	568	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	597	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	569	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	598	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	570	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	599	भयधनस्य Mc BHAYADHANASYA
भ-य-ध-ग-न-स ॐ ॐ ॐ ॐ ॐ ॐ BHA-YA-DHA-NA-SA	571	भयधनस्य Mc BHAYADHANASYA DHA-NA-QA	600	भयधनस्य Mc BHAYADHANASYA







160 अधनका  
ADHANAKA  
-SYA

MC अधिक  
662 ARDHAKA

ME दसस्य  
663 DĀSASYA

ME धरुधन  
664 DHARA DHVA  
-JA

MC धारस्थ  
65 DHARASTH

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DHVAJA -  
NAGA

Mc  
671 Edith  
Dhruva

MC 672  
EJ DHARA

MC ग्रामस्थ  
674 GRAMASTA

MC ध्यान  
676 DHYANA

Me वज्र  
678 VASRA

ME धारस्य  
674 DHARASYA

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DHA-YA - NA - DHA-<sup>685</sup>YA DHYANA  
DHVAJA

HA-YA DHVAJA

DHARASYA  
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PLATE - C







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धनगण ॐ नमो भगवते वासुदेवाय DHA-NA-GA-NA	12548 12035	धनगण DHANA-GANA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-LA-NA-DHA-SA	H220	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-RA-	12574 12548	धनगण DHARA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-NA-GA-YA	2266	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-TTA	12574 12548	धनगण DHARTTA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-NA-DHA-RA	3463	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-NA	12574 12548	धनगण DHANA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-LA-DA-SYA	H 605	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-SA-YA	12574 12548	धनगण DASAJA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	PI-2	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-TTA-YA	12574 12548	धनगण DHARTTAJA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	10011	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-LA-NA-	12574 12548	धनगण DHARANA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	12537	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-GA-SA	12574 12548	धनगण GADASYA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	2540	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-YA-NA	12574 12548	धनगण DHYANA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	4965	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-RMA-NA-SA	12574 12548	धनगण DHARMANASADHA-RA-M-A-NA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	4965	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-RSA-YA-SA	12574 12548	धनगण DHARSASASADHA-RA-M-A-NA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	4965	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-A-NA-SA	12574 12548	धनगण DHARANA-SYA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	4965	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-SA-NA-VA	12574 12548	धनगण DASANABHA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	4965	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-NA-GA-DHA-	12574 12548	धनगण DHANA-GADA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	4965	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-SA-NA-YA	12574 12548	धनगण DASANAJA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	4965	धनगण DHANA-GANA
धनगण ॐ नमो भगवते वासुदेवाय DHA-SA-NA	12574 12548	धनगण DASAJA	धनगण धन ॐ नमो भगवते वासुदेवाय DHA-YA-NA-YA	4965	धनगण DHANA-GANA



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ॐ नमो भगवते वासुदेवाय ॥  
 DHA-RMMA-NA-SA DHARMMA

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A-DHA-NA-MA-YA ADHANANAYA

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 DHA-SA  
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१००८६ धनज  
 DHA-NA-YA DHANAJA  
 ध-र-ग-ज-स  
 १००८६ धनज

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DHA-SA-YA-SYA DĀSAJH SYA

DHA-SA-NA-YA-DHA-A धर  
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 न ग स ग र्सा ध धर्सावा  
 ५४३ धर्षकसेन  
 NASA GARSA DHA DHARSAVA

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अ ध र	12576	अधर	ध अ ण	2700	धरण
A-DHA-RA		ADHARA	ध ण		DHARAṆA
अ र ध र	8650(६)	अधरज	ध ण	2785	दासज
YA-RA-DHA-A		ADHARAJA	DHA-SA-ṆA		
ध न ध अ	2257	अधर धर	ध र ण		धरण
DHYA-LA-DHA-A		ADHYARA	DHA-RA-ṆA		DHARAṆA
अ ध	12104	अध (३)	ध ण	1133	दशनस्य
A-DHA		ADHA	DHA-SA-ṆA-SA		DASANASYA
ध र न ध र		धज रुधक	ध र ध ण	11332	धर धन
DHA-YA-RA-NA-DHA-A		DHYAJA	DHA-RA DHA-NA		DHARA DHANA
अ ध ण म य	12066	RANDHAKA	ध ण ग य ण	2785	दशगजस्य
A-DHA-ṆA-MAYA		अधनमय	DHA-SA-GA-YA-SA		DASAGAJASYA
न य ध ण		ADHANA	ध न ग ण - ध		धन, गणद
NA-YA-DHA-ṆA-SYA	130	MAYA	ध ण	11368	धन, गणद
ध र	141	धज	DHA-ṆA-GA-ṆA-DHA		DHANA-GA-ṆA-DA
DHA-YA		DHYAJA	ध ण		दासकरयध(न)
ध ण	10186	धन	DHA-SA - GA-SA-DHA		DASAKASYA
DH ṆA		DHUNA	1056		DHYA(SA)
ध ण	11305	धन	ध 1 ण		ध अ ग ण
DHA-NA		DHANA	DHA ṬṬA-ṆA -		DHA-RA-GA-SANAṆA
ध ण	627	दासद	5399		DHARTENA
DHA-SA-DHA		DASADA	न अ, ध - ग		धरक
ध ण	3644	धनद	य 1111		नरगद
DHA-ṆA-DHA		DHANADA	NA-A-DHA-GA -		5399 NARAGADA
ध ण	272	अगद	ध न		ध न ग
DHA-GA-YA		AGADA	ध ण		ध न ग
ध ण	1240	गदनस	DHYANA - DHANAGA		DHYANA DHANAKA
DHA-GA-NA-SA		GADANASA	ध न		ध न
ध 1	5534	धातेज	A-NA DHA		DHANA
DHĀTTA-JA		DHĀRTTAJA	ध ण		ध न
ध न	2118	धनज	NA - A - NA-YA-DHA		DHYĀNA NARA
DHA-NA-YA		DHANAJA	ध न ग ण		धन गणद
			DHA-NA-GA-ṆA - DHA		DHANA GANADH



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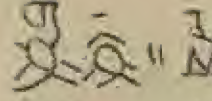
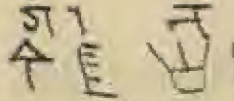
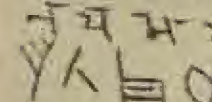
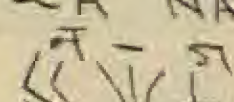
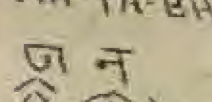
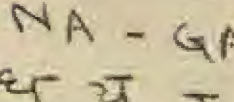
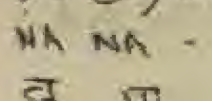
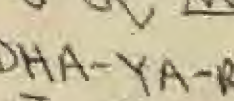
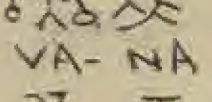
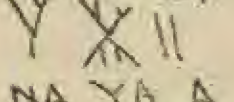
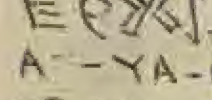
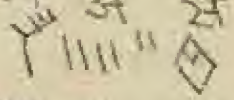
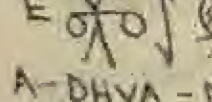
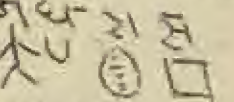
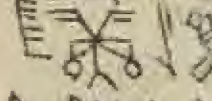
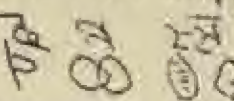
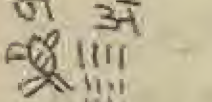
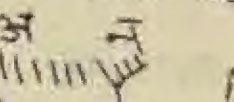
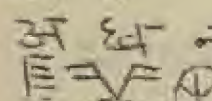
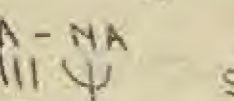
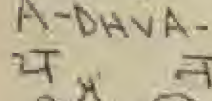
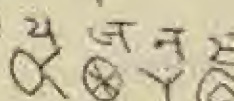
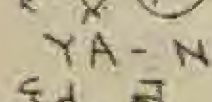
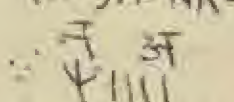






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 NA YA- BHA- YA- NA- - SA BHAYANA NA - GA- JA - 3125	भयने NAYA 10831	 NA - GA- JA - 5082	नागज NAGAJA
 NA NA - GA 2254	नन NANA.	 NA YA A 10929	नन NANA.
 A - YA- NA- 10242	अनेन AJENA	 NA - A- SA 94	अनेन NARASYA
 A- DHVA- NA 11390	अध्वने ADHVENA	 GA- THA SSA 1220	अध्वने GADASYA
 A- DHVA- NA 10830	अध्वने ADHVENA	 DA- TTA- SSA 10774	अध्वने DATTASYA
 NA- A 4765	नर NARA	 A - NA 62	नर NARA
 A- DHVA- NA- YA 10103	अध्वनेन ADHVANAJA	 A - NA 5975	अध्वनेन NARA
 YA- NA 4432	जन JANA	 YA- JA- NA- SA 4179	जन JANASYA
 DHVA NANA 7098	ध्वनेन DHVANENA	 NA - A 4444 (10)	ध्वनेन NANA
 A- DHVA- NA- NA 2630	अध्वनेन ADHVANENANA	 NA - A- SA 3481	अध्वनेन NARASYA
 NA DHA 8650 (8)	धन DHANA	 NA - A- SA 4015	धन NARASYA







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GA-NA DHA

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DHA-YA-NA


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$\begin{array}{ccc} \text{E} & \text{F} & \text{F} \\ \text{Q} & \text{Y} & \text{X} \\ \text{NA} & \text{NA} & \text{YA} \end{array}$

$\sqrt{F}$   $\sqrt{Y}$   $\sqrt{A}$   $\sqrt{B}$   $\sqrt{C}$   $\sqrt{D}$   $\sqrt{E}$   $\sqrt{F}$   $\sqrt{G}$   $\sqrt{H}$   $\sqrt{I}$   $\sqrt{J}$   $\sqrt{K}$   $\sqrt{L}$   $\sqrt{M}$   $\sqrt{N}$   $\sqrt{O}$   $\sqrt{P}$   $\sqrt{Q}$   $\sqrt{R}$   $\sqrt{S}$   $\sqrt{T}$   $\sqrt{U}$   $\sqrt{V}$   $\sqrt{W}$   $\sqrt{X}$   $\sqrt{Y}$   $\sqrt{Z}$

ध ज्ञ अ ग व  
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NA-BHA-NA-A

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 10

Y-A-DHA N-N

५-४-७७  
 ५-४-७७  
 ५-४-७७

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

धनद्यु  
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DHANA

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DHYĀNA

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AGASYA

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धरुगणन  
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GAVA

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5 अवन  
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91 AQUANA

[illegible]

DHAN KSA LA NAGENA M60  
ध-रुण नगम  
५४ \* ५८ " \* ५९ धरण M60

NA-DHA-NA NA-GA-SA तगल  
 त ध ज म६०  
 य य' ⊗ म६१ तदज  
 NA-DHA-NA NA-DA-NA

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DHA-RA-SA-NA-SA 66  
रक्षण व धर्मेन च

दासा नाना वा दासानाभ  
 दासा नाना वा दासानाभ

DA-NA-QA-SA DIANUGA  
-SYA

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NA - A - NA NA NARA  
A F H HATI - NASA

$\frac{1}{2} = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

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ENA न अ ज M415  
 Y " IIII " ⊗ M416 न र ज  
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 GA-DHA-NA-JA AGADHANAJADHA-SA-GA-NA-DA-NA  
 ध-स न अ स M 130  
 DHA-SA - 103 DASA NA-A-SA 1311 NARASYA  
 ध स ण ज ध-न ग M धनका  
 DHA-SA-NA-JA 114 DASANAJA DHVA-NA-GA 132 DHYANAKA  
 ग ध ण ध स अगधनदस्य न अ नर  
 GA-DHA-NA-DHA-SA -DASYA NA-A 115 AGADHANA Y IIII M 133 NARA  
 ध ध ण ध ल ध-य ण ज M ध्यानज  
 YA-DHA-NA DHALA-DHARA 119 ADHANA DHA-YA-NA-JA 134 DHYANAJA  
 ध स ण ध-य ण ज M अजन  
 DHA-SA-NA 120 DASENA A-YA-NA 135 AJANA  
 व न य स ध अ ण M धून  
 VA-NA-YA-SA 121 VANAJASYA DHU NA 137 DHUNA  
 ध न ध अ ध-य र न ध ध्यान-  
 DHA-NA-DHA-A - DHARA 122 DHANA { रण्य दास  
 ध अ स ध-स ग ध M धर्षा  
 DHA-A-SA 123 DHARASYA DHA-RSA-GA-DHA GADA  
 व य स M VAGRASYA न अ स M 140 नरस्य  
 VA-YA-SA 127 VAGJASYA Y IIII M 143 NARASYA  
 द न ध धनद ध-र ध अ M धर धर  
 DA NA DHA 128 DHANADA DHA-RA-DHA-A 145 DHARA  
 ध-य ध ध-र ध रस्य ध धर्ष्य  
 DHVA-NA-YA 129 DHVAJA DHA TTA - SSA DHARTTA  
 -SYA.



ध (२) ॥ ॐ M148 धनज DHANAJA ग ज ध य गणध्वज  
 DHA-NA-JA GA-NA-DHA-YA 172 GA-NA  
 न य ध न य न य M न य द ध न ज 145 NAYA अ ग ज न M अ ग ज न 173 अ ग ज न  
 NA YADHA-SA NAYA DASANAJA A-GA-NA-NA AGANENA  
 ध स ज म य ज 151 द व न म य क ध न ज य  
 DHA-SA-NA-NAYAGA DASANA MAYAKA DHA-NA-GA-YA DHANA  
 ध य ज M धान 154 धान ध य M174 GAJA  
 DHA-YA-NA DHYANA DHYANA DHYANA M179  
 ग ज ध अ M ग द्या र DHA-YA-DHA-NA-धनध्वज  
 GA-NA-NA 155 GANDHARA ध ज ध स DHANADHVAJA  
 ध ॥ ॐ M धनेन 156 धनेन DHA-NA-NA-धनद्वय  
 DHA-NA-NA DHANENA ग ध ध DHANADASA  
 न अ स M नरद्वय 157 नरद्वय GA-DA-SYA 182 गद्वय  
 NA-A-SA NARASYA GADASYA  
 म य ज स M अ य न द्य 158 BHAYANA DHA-LA 187 DHARA  
 BHA-YA-NA-SA -SYA ध म न ज य  
 न अ ध स M नारद्वय DHA-A-TA-NA-YA 188 DHARA  
 Y ॥ ॐ M नारद्वय 159 NARADASYA TANAYA  
 ना-अ-धा-सा ग ज ध य 189 GAJA  
 ध र ध अ M धर धर ज य स 190 धजज  
 DHA-RA-DHA-A DHARA NA YA GASA NAYAKA  
 ध ग म न M गद्वय 161 गद्वय GADASENA ध य ज 192 धवाजा  
 DHA-GA-SA-NA DHARA-DHA-YA-JA 193 DHVAJA  
 ध र ॥ ॐ M धरण्य 162 DHARA-ध य  
 DHA-RA-NA-SA NASYA DHA-YA 193 DHVAJA  
 ग ध M गद्वय 163 गद्वय GADA अ ध ज 195 अधव  
 GA-DHA A-DHA-LA 195 ADHARA  
 ध अ M 164 अधव

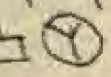
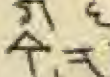
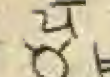
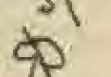
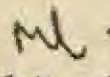
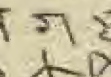
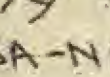
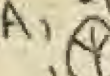
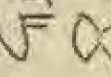

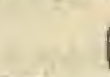
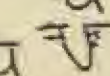
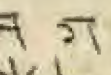
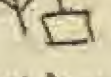
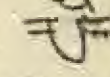
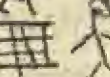
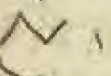
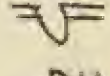
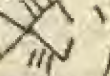
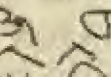
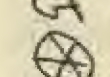
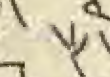
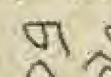
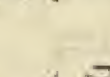

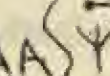
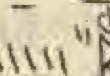
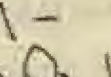
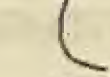
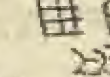
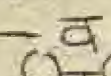
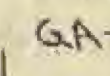
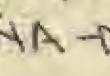
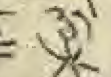
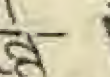

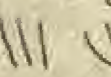

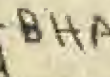

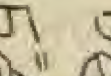
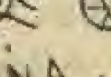




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म ग BHA-GA	M 244	म ग BHAGA	क न ग DA NA GA	M 265	गणद GANADA
ध स य DHA-SA-YA	M 245	दासज DASAJA	ज ग JA GA	M 266	गज GAJA
न अ स NA-A-SA	M 246	नरस्य NARASYA	व म VA - MMA	M 268	वर्म VARMMA
धज गणद DHVAJA	M 247	राणाद RANADA	म य न BHA-YA-NA	M 269	भयेन BHAYENA
अधस्य A-DHA-SA-SA	M 248	अदास्य ADASASYA	न अ NA-A	M 270	नर NARA
न अ NA-A	M 249	नर NARA	ध अ DHA-A	M 275	धर DHARA
अ ग ध ग AGA DHANA	M 251	अगधन AGADHANA	ध अ DHA-LA	M 279	धर DHARA
ध य DHA-YA	M 252	धज DHVAJA	न अ NA-A	M 281	नर NABA
ध र ग ध DHARA	M 253	धरगदस्य GADASYA	ध य स DHA-YA-SA	M 285	धजस्य DHVAJASYA
ग ग GA-NA	M 254	गण GANA	ध अ DHVA-A	M 287	अध्व ADHVA
ध अ DHA-TTA	M 257	दत्त DATTA	ध र स DHA-RMMA-SA	M 294	धर्मस्य DHARMMA-SYA
ग ग GA-NA	M 261	गण GANA	ध र स DHA-RA-SA	M 298	धरस्य DHARA-SYA
ध अ DHA-NA-SA	M 262	धनस्य DHANASYA	ध न DHA-NA	M 299	धन DHANA



धनगन  ML 300 धनघ्न  गदजस्थ   
 DHA-NA-GA-NA DHANAGHNA धनघ्न जन  
 न अ ग  ML 301 नरक  ML 329  
 NA-A-GA NARAKA धनघ्न जन  
 ध स ग स  ML 305 दशकस्थ DHA-SA-NA-YA दसनज  ML 330  
 DHA-SA-GA-SA DASAKASYA न ग य जनैः   
 ध य ज - य स  ML 306 ध य ध स  धनदासज   
 YA-DHA-YA-NA-YA-SA ADHYANAJASYA धनदानजस्थ  DHVAJA  
 व न ग न व वनकन  DHA YA-DHA-SAYA DASAJA  
 व न ग न व वनकन  YANAKA  दशकस्थ   
 VA NA GA NATTA NARTTA DHA-SA-GA-SA DASAKASYA  
 म य न य  मयनज  धनज   
 BHA-YA-NA-YA BHAYANAJA DHA-YA ML 335 DHVAJA  
 ध अ ग ग  धूनेन  धरस्थ   
 DHU NA NA DHU NENANA GARA DHASA SYAGAJA  
 ध ग ग  धनेन  न - व ग नरकस्थ   
 DHA-NA-NA 323 DHANENA  नरकस्थ   
 ग ग -  गणस्थ  ML 346 NARAKA  
 GA NA - SSA GANASYA ग ग ध य स गणध्वजस्थ   
 GA NA - SSA ML 324 GA-NA-DHA-YA-SA ASYA  
 गवः  अ म य ग  ML 347  
 धूमदत्त  अभयनेन   
 अग  धनस्थ  ABHAYA  
 GA NA - SA AGADHANASYA ध स ग स दसनस्थ   
 ग ग ज  ML 326 DHA-SA-NA-SA DASANA  
 गणज  न अ - ML 351 -SYA  
 GA NA - JA 327 GANAJA  नर NARA



गण GA-NA	ML 365	गण GA-NA	नयग- NAYA-GA-	ML 410	नायक NAYAKA
धन DHA-TTA	ML 366	दत्त DATTA	धयय DHA-YA-YA	ML 412	ध्वजज DHVAJAJA
धन DHA-TTA NA-SA	ML 369	धार्त्तनस DHARTTANASA	धन DHA-A	ML 414	धर धन DHARA DHANA
धयय DHA-YA-NA NA	ML 370	ध्यानेन DHYANENA	धर DHA-RA-NA	ML 415	धरण DHARANA
धयय DHA-RMM-NA	ML 374	धम्मम DHARMMA NA	धयय DHA-RA-GA-SA	ML 416	धरकश्य DHARAKASYA
धन DHA-NA	ML 376	धन DHANA	अधन A DHA NAGANA	ML 418	अधनघ्न ADHANAGHNA
धयय DHA-YA	ML 378	धज DHVAJA	धयय DHA-YA-NA-YA	ML 420	ध्यानज ADHANAGHNA
गण GA-NA NA	ML 380	गणेन GANENA	नय NA-A	ML 422	धरण DHANA
धयय DHA-RA	ML 385	धर DHARA	नय NA-A	ML 424	नय NARA
अगण A GA-NA SA	ML 387	अगणस्य AGANASYA	अगण SSA GA-NA SA	ML 426	स्वर्गस्य SVARGASYA
धयय DHA-YA-GA-SA	ML 393	धयजकश्य DHVAJAKASYA	नय NA-YA NA	ML 428	नयधन NAYA
नय NA-A	ML 395	नयधन NARA-DHANA	नय NA-YA NA	ML 430	नायक NAYAKA
गण GA-NA	ML 400	गणजधरधनस्य DHANAGADANA	धन DHA NA-GA-NA	ML 432	धनधन DHANA
धयय DHA-YA	ML 408	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 434	धनधन DHANA
नय NA-A	ML 409	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 436	धनधन DHANA
धयय DHA-YA	ML 410	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 438	धनधन DHANA
नय NA-A	ML 411	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 440	धनधन DHANA
धयय DHA-YA	ML 412	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 442	धनधन DHANA
नय NA-A	ML 413	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 444	धनधन DHANA
धयय DHA-YA	ML 414	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 446	धनधन DHANA
नय NA-A	ML 415	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 448	धनधन DHANA
धयय DHA-YA	ML 416	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 450	धनधन DHANA
नय NA-A	ML 417	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 452	धनधन DHANA
धयय DHA-YA	ML 418	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 454	धनधन DHANA
नय NA-A	ML 419	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 456	धनधन DHANA
धयय DHA-YA	ML 420	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 458	धनधन DHANA
नय NA-A	ML 421	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 460	धनधन DHANA
धयय DHA-YA	ML 422	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 462	धनधन DHANA
नय NA-A	ML 423	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 464	धनधन DHANA
धयय DHA-YA	ML 424	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 466	धनधन DHANA
नय NA-A	ML 425	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 468	धनधन DHANA
धयय DHA-YA	ML 426	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 470	धनधन DHANA
नय NA-A	ML 427	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 472	धनधन DHANA
धयय DHA-YA	ML 428	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 474	धनधन DHANA
नय NA-A	ML 429	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 476	धनधन DHANA
धयय DHA-YA	ML 430	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 478	धनधन DHANA
नय NA-A	ML 431	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 480	धनधन DHANA
धयय DHA-YA	ML 432	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 482	धनधन DHANA
नय NA-A	ML 433	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 484	धनधन DHANA
धयय DHA-YA	ML 434	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 486	धनधन DHANA
नय NA-A	ML 435	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 488	धनधन DHANA
धयय DHA-YA	ML 436	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 490	धनधन DHANA
नय NA-A	ML 437	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 492	धनधन DHANA
धयय DHA-YA	ML 438	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 494	धनधन DHANA
नय NA-A	ML 439	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 496	धनधन DHANA
धयय DHA-YA	ML 440	धज DHVAJA	धयय DHA NA-GA-NA SA	ML 498	धनधन DHANA
नय NA-A	ML 441	नय NARTTANA	धयय DHA NA-GA-NA SA	ML 500	धनधन DHANA



न अ ध स 𑀢𑀺𑀓𑀺𑀓𑀺𑀓𑀺 ML	नरदास	GA-DHA	𑀢𑀺𑀓𑀺𑀓𑀺 ML	GADA
NA-A-DHA-SA 439	NARADĀSA	𑀢𑀺𑀓𑀺𑀓𑀺	496	𑀢𑀺𑀓𑀺
न अ 𑀢𑀺𑀓𑀺 ML	नर	𑀢𑀺𑀓𑀺	ML 526	𑀢𑀺𑀓𑀺
NA-A 441	NARA	DHA-RA		DHARA
अ य ण - य 𑀢𑀺𑀓𑀺𑀺𑀺𑀺 ML	भयनन	अ य ण - य 𑀢𑀺𑀓𑀺𑀺𑀺𑀺 ML	529-30	अदत्तेन
BHA-YA-NA-YA 441	BHAYANAJA	A-DHA-TTA-NA		ADATTENA
न य ध स 𑀢𑀺𑀓𑀺𑀺𑀺 ML	नयदास	अ ग ण - य 𑀢𑀺𑀓𑀺𑀺𑀺 ML		अगणज
NA-YA-DHA-SA 448	NAYADĀSA	AGA-NA - YA	534	AGANAJA
न न ण म य 𑀢𑀺𑀓𑀺𑀺𑀺 ML	नर्त्तनमय	𑀢𑀺𑀓𑀺𑀺𑀺 ML		धन
NA-TTA-NA-MA-YA 458	NARTTANA - MAYA	NA-DHA	535	DHANA
ध अ 𑀢𑀺𑀓𑀺𑀺𑀺 ML	धर	अ अ र न ग 𑀢𑀺𑀓𑀺𑀺𑀺 ML		अरोदनका
DHA-A 460	DHARA	A-A-DHA-NA	539	ARODANAKA
ग ज ध 𑀢𑀺𑀓𑀺𑀺𑀺 ML	ध्वजक	ध अ र ध य 𑀢𑀺𑀓𑀺𑀺𑀺 ML		धान्वज
GA JA DHA 463	DHVAJAKA	DHATTA-DHAYA	541	DHARTTA
ध म स 𑀢𑀺𑀓𑀺𑀺𑀺 ML	धमस्य 14	ध य स 𑀢𑀺𑀓𑀺𑀺𑀺 ML		धवाज
DHA-NA-SA 465	DHAMASYA	DHA-SA - DHA-NA-SAGAYA		𑀢𑀺𑀓𑀺𑀺𑀺
ध अ स स 𑀢𑀺𑀓𑀺𑀺𑀺 ML	धरस्य	𑀢𑀺𑀓𑀺𑀺𑀺 ML	553	DASA DHANASYAGAJA
DHA-A-SSA 466	DHARASYA	𑀢𑀺𑀓𑀺𑀺𑀺 ML		गणस्य
न न ण न 𑀢𑀺𑀓𑀺𑀺𑀺 ML	नर्त्तनेन	GA-NA-SA 551		GANASYA
NA-TTA-NA-NA 467	NARTTANENA	ध य र न - ध न ग 𑀢𑀺𑀓𑀺𑀺𑀺 ML		𑀢𑀺𑀓𑀺𑀺𑀺
ध अ ण - ज 𑀢𑀺𑀓𑀺𑀺𑀺 ML	धूनज	DHA-YA-RA-NA-DHA-NA-GA	555	
DH U NA - JA 468	DHUNAJA	ध ज र ण ध न क 𑀢𑀺𑀓𑀺𑀺𑀺 ML		DHVAJA RA-NA-DHANAKA
ध अ म ध 𑀢𑀺𑀓𑀺𑀺𑀺 ML	धूमद	ध स 𑀢𑀺𑀓𑀺𑀺𑀺 ML		ध ज य दशधनज
DH U MA DHA 469	DHUMADA	𑀢𑀺𑀓𑀺𑀺𑀺 ML		DASA
ध य ण ण 𑀢𑀺𑀓𑀺𑀺𑀺 ML	ध्यानेन	DHA-SA - DHA-NA-YA		DHANAYA
DHA-YA-NA-NA 470	DHYĀNENA	अ य न ग ण न 𑀢𑀺𑀓𑀺𑀺𑀺 ML		𑀢𑀺𑀓𑀺𑀺𑀺
ध र ण 𑀢𑀺𑀓𑀺𑀺𑀺 ML	धरण	A-DHA-NA-GA-NA-NA 15		ADHANAGHNEA अ य न वृत्त
DHA-RA-NA 474	DHARANA	ध अ म ण 𑀢𑀺𑀓𑀺𑀺𑀺 ML		धूमैन
ध न 𑀢𑀺𑀓𑀺𑀺𑀺 ML	अध्वर	DH U MA NA		DHUMENA
DHVA LA 475	ADHVARA	ध - ण म य स 𑀢𑀺𑀓𑀺𑀺𑀺 ML		धनमयस्य
ध न 𑀢𑀺𑀓𑀺𑀺𑀺 ML	धर	DHA - NA MAYASA MAYASYA		DHANA
DHA-LA 487	DHARA	ग ण 𑀢𑀺𑀓𑀺𑀺𑀺 ML	21	𑀢𑀺𑀓𑀺𑀺𑀺
ध र 𑀢𑀺𑀓𑀺𑀺𑀺 ML	धर	𑀢𑀺𑀓𑀺𑀺𑀺 ML		गण गदस्य
DHA-RA 488	DHARA	𑀢𑀺𑀓𑀺𑀺𑀺 ML	25	GA NA
ध ज ण 𑀢𑀺𑀓𑀺𑀺𑀺 ML	ध्वज	GA-DHA-SA - GADASYA		
DHA-JA-JA 490	DHVAJA	ध अ न ध 𑀢𑀺𑀓𑀺𑀺𑀺 ML		धूमद ML 30
𑀢𑀺𑀓𑀺𑀺𑀺 ML	धर्मध्वर	𑀢𑀺𑀓𑀺𑀺𑀺 ML		DHUMADA
𑀢𑀺𑀓𑀺𑀺𑀺 ML	DHARMADHAR			











Bhaga - "A Vedic god and Aditya, regarded chiefly as dispensing fortune; brother of Usha" Antiquities of India, p.19.

5. दवाजः - 'चिकित्सुः। इति मेदिनी-। शब्दकल्पद्रुमः।

6. Agada :- 1. A medicine, a medicinal drug. 2. Health, freedom from disease.

Prin. V.S. Apte's The Prac. Sans. Eng. Dic. Vol. I, p.12, "agada, m. Skr. agada drug, antidote" Sakh - Studies "Stan Konow" - p.114.

7. Gada :- "N. of a son of Vasu-deva and younger brother of Krishna MBh., Hariv.; BhP.; of another son of Vasu-deva by a different mother, lx, 24; 51"; a Sans. Eng. Dic. M. Monier Williams, p.344. "Of Kubera" Prin. V. S. Apte's - 'The Prac. Sans. Eng. Dic. Vol. II' - p.346.

Gadha :- 'ground for standing on in water' N. of a people' A Sans. Eng. Dic. M. Monier Williams, p.353.

7a. Ānana :- Pīnatthapattthambhīnana = pīnatthapattthambhīnana. R. Fiechel - Comparative Grammar of the Prakrit Languages §160.

7b. 8, 8a, 10 :- Gadhara, Gandhara, Gandhara, Gadhala :- An interesting thing is to be stated here that in the inscriptions of Achaemenid, there are words like Gadhara, Gadhala, Gadharasya etc. These words I think most probably mean Gandhāra. "There are five columns at Behistan containing the inscriptions of the Achaemenid King Darius, the great .....

In column I Darius gives a list of 25 countries "then came to" him. In this

list we find two names that are Indian viz., Ga (h) dara or Gandhara and

Qatagus or Sattagydia". The Achaemenids in India by Sudhakar Chattopadhyaya,

p.6. "The South Tomb at Parsapalis is usually assigned to Artaxerxes

II (404-396 B.C.) on artistic grounds. Here is/inscription" - a portion of

which reads - "iam Qatagaviya (this is a Sattagyidian); iya Ga (n) dariya

(this is a Gandharian); iya Hi (n) duviya (this is a Hi (n) du)" Ibid.

p.14. This word "Gadariya" means Gandharian. So Gadhara in the Indus

inscription has strong similarity with the Indo-Iranian word Gadariya

which means an inhabitant of Gandhāra.

Gandhara :- "Of a people" A Sans. Eng. Dic. M. Monier Williams, p.346.



- 8b. Agam :- 'a mountain', 'a tree'. A Sans.Eng.Dic. M. Monier Williams, p.4.
9. Dhara "N. of a Vasu, MBh.; of a follower of the Pāṇḍavas, Ib.; of the king of the tortoises; L.; of the father of Padmaprabha (6th Arhat of pres. Ava-Sarpinā)". A Sans.Eng.Dic. M. Monier Williams, p.510. Tod says that Māndhātā was a king of central India 'whose capitals were Dhār and Ujain', A.R.A.S.I. 1871-73, p.163.
- 9a. Gagasya :- One seal with the inscription Gagasya was obtained from Bhita Excavation. "Excavation at Bhita" A.R.A.S.I., 1911-12, p.57.
- 9b. 9c. Gadhama, 'a kind of arrow, Hariv.8865'. A Sans.Eng.Dic. M. Monier Williams, p.353.
11. Datta :- "The word for a ruined city or settlement was arma or armaka ..... Pāṇini and the Aśoka mentions the following - arma-ending place names. Bhūtarma, Adhibarma, Sañjivarma, Madharmā, Asmarmā, Rajjilarmā, Dattarma, Guptarma, Makutarma, Vayasarma, Brhadarma, Navarma, etc." 33b. Raychaudhary and the Indus Valley civilization Dr. Buddha Prakash, p.83. ...
- Foot note :- "33b. T. Burrow. 'On the significance of the term arma-armaka in the Early Sanskrit Literature', Journal of Indian History, XLI (1963) 159-66.
12. Dhama :- One Seal with the inscription Dhamasya was obtained from Basarh Excavation. Excavation at Basarh. A.R.A.S.I. 1913-1914, p.145.
13. Ag - 1. A tree. 2. A mountain. 3. A Sanha. 4. The sun. Prin. V. S. Apte's. "The practical Sans.Eng.Dic. Vol.I, p.11.
14. Dhama :- One inscription inscribed with amētya Dhamadevasya (amētya Dhamadevasya) was obtained from Bhita excavation. A.R.A.S.I. 1911-12. Excavation at Bhita, p.53. Dhama - "m. (only L.) the moon; N. of Brahman; of Yama; of Kṛishṇa". M.Monier Williams - A Sans.Eng.Dic. p.509.







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26/11/75

Hareppa — Inscriptio  
Inscriptio — Hareppa



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